DOCUMENT RESUME

ED 065 240 RC 006 314

AUTHOR	Leven, Charles L.; And Others
TITLE	Workshop on Problems of Chronically Depressed Rural Areas (Asheville, N.C., April 1965).
INSTITUTION	North Carolina State Univ., Raleigh. Agricultural Policy Inst.; Tennessee Valley Authority, Washington, D. C.
SPONS AGENCY	Kellogg Foundation, Battle Creek, Mich.
REPORT NO	API-19
PUB DATE	Nov 65
NOTE	233p.
EDRS PRICE	MF-$0.65 HC-$9.87
DESCRIPTORS	*Agricultural Research Projects; Area Studies; *Depressed Areas (Geographic); *Economic Development; *Employment Opportunities; Land Use; Low Income; Policy Formation; Poverty Research; Relocation; *Rural Areas; Rural Education; Tables (Data); Technological Advancement; Turf Management; Welfare

ABSTRACT

A workshop was conducted at which 13 papers were presented on problems of chronically depressed rural areas. Attendees endeavored to assess the existing knowledge with respect to these problems, to point out major gaps in this body of knowledge, and to suggest types of research needed to cope with the problems of rural poverty. It was determined that many values and beliefs held by poverty-stricken people impede the introduction of changes which can eliminate poverty in rural areas. Additional research is needed on the returns and costs of improving the quality of education, the relationships of size and location of areas to developmental potentialities, and the arrangement of alternatives in an ordering of priorities that will be useful to public decision-makers. It was further concluded that additional research is needed on the social costs and returns of transferring people from low-income areas. (HBC)

ED 065240

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

PROBLEMS OF CHRONICALLY DEPRESSED RURAL AREAS

RECEIVED
AUG 17 1972
NMSU
E.R.I.C.

PUBLISHED BY THE
AGRICULTURAL POLICY INSTITUTE
NORTH CAROLINA STATE UNIVERSITY
IN COOPERATION WITH THE
TENNESSEE VALLEY AUTHORITY
NOVEMBER 1965

RC006314

ED 065240

RECEIVED
AUG 17 1972
NMSU
E.R.I.C.

WORKSHOP ON PROBLEMS OF CHRONICALLY DEPRESSED RURAL AREAS

Asheville, N. C. / April 1965

This special report contains papers presented at a workshop on Problems of Chronically Depressed Rural Areas held in Asheville, North Carolina, April 26-28, 1965. The workshop was sponsored by the Agricultural Policy Institute at North Carolina State University in cooperation with the Tennessee Valley Authority. The Institute operates under a grant from the W. K. Kellogg Foundation.

API

SERIES
19

November 1965

Sponsored by the

Agricultural Policy Institute
North Carolina State University

in cooperation with the

Tennessee Valley Authority

PREFACE

The next few years will witness increased emphasis by federal, state and local governments on the problems of slow-growing or chronically depressed rural areas. In order to provide guidelines for these new patterns of activity, the Agricultural Policy Institute, in cooperation with the Tennessee Valley Authority, sponsored a Workshop on Problems of Chronically Depressed Rural Areas at Asheville, North Carolina, April 26-28, 1965.

The major aims of the workshop were: (1) to take stock of existing knowledge with respect to problems of chronically depressed rural areas; (2) to point out major gaps in this body of knowledge; and (3) to suggest types of research that will be needed to cope with problems of poverty in rural areas that have a long history of low per capita incomes. Attendance at the workshop was limited to a relatively small group of professional people who had worked in the field of regional economic growth and to persons who had shown a particular interest in problems of rural poverty.

A few of the most salient points that emanated from the workshop were the following:

(1) There are commonly three different concepts of what is meant by "regional development": (a) an increase in the region's aggregate income; (b) an increase in per capita or per family income within the region; and (c) an increase in the efficiency of production within the region. Each of these different concepts lead to different explanations of the causes of regional growth and to different policy recommendations.

(2) Many values and beliefs held by poverty-stricken people are so highly effective in providing security to people whose life conditions are inherently insecure that the introduction of changes which will eliminate poverty is difficult to achieve.

(3) Little is known about the economics of the quality features of education. The costs of and the returns to those aspects of schooling which result in improvements in the quality of education should be analyzed more thoroughly.

(4) Sparsely settled rural areas, if they possess few resources other than land, are not generally good candidates for development unless they are fairly close to urban centers. More research on the relationships of size and location of areas to developmental potentialities is needed.

(5) Much of the hard-core rural poverty is located on land with limited prospects for development, and investments to develop farmland have severe limitations. There is, therefore, need for further studies of the social costs and returns of transferring people from low-income areas.

(6) Policy emphasis in the development of rural depressed areas has tended to be based on welfare rather than efficiency criteria. To guide policy-makers there is great need for numerous types of research studies that will delineate those kinds of activities that are potential sources of growth, evaluate the social costs and benefits of these activities, and arrange the alternatives in an ordering of priorities that will be useful to public decision-makers.

TABLE OF CONTENTS

Page

THEORIES OF REGIONAL GROWTH
Charles L. Leven 1

INTERDISCIPLINARY ASPECTS OF THE THEORY OF REGIONAL DEVELOPMENT
Mary Jean Bowman and C. Arnold Anderson 13

THE EFFECTS OF PREVAILING VALUES AND BELIEFS ON THE PERPETUATION OF POVERTY IN RURAL AREAS
Thomas R. Ford 33

EDUCATION AND ECONOMIC OPPORTUNITIES IN DEPRESSED AREAS: IMPLICATIONS FOR RESEARCH
Theodore W. Schultz 45

ENTREPRENEURSHIP AND INNOVATION IN CHRONICALLY DEPRESSED AREAS
Ernst W. Swanson 55

A CRITICAL ANALYSIS OF THE AREA REDEVELOPMENT ACT AND LOCAL SUBSIDIES TO INDUSTRY
Anthony M. Tang 85

EFFECTS OF ADVANCING TECHNOLOGY AND CAPITAL INTENSIFICATION IN AGRICULTURE ON CHRONICALLY DEPRESSED RURAL AREAS
Paul R. Johnson 101

EFFECTS OF ADVANCING TECHNOLOGY AND CAPITAL INTENSIFICATION IN NONFARM INDUSTRY IN DEPRESSED RURAL AREAS
Edward K. Smith 113

EFFECTS OF THE NATURAL RESOURCE BASE ON CHRONICALLY DEPRESSED RURAL AREAS
W. B. Back 137

A CASE STUDY OF A PERSISTENT LOW INCOME AREA IN SOUTH CENTRAL KENTUCKY--ITS NEEDS AND POTENTIALS FOR DEVELOPMENT
E. L. Baum and R. B. Glasgow 151

TABLE OF CONTENTS (Cont'd.)

Page

A CASE STUDY OF SIX CENTRAL WEST VIRGINIA COUNTIES OF THE INTERRELATIONSHIPS OF FACTORS LEADING TO PERSISTENCE OF LOW INCOMES AND UNEMPLOYMENT IN THE AREA
O. C. Stine 173

ANALYTIC METHODS FOR THE DETERMINATION OF GROWTH POTENTIALS OF DEPRESSED RURAL AREAS
H. Albert Green 207

THE ADMINISTRATIVE PROBLEM OF ALLOCATING PUBLIC RESOURCES AMONG DEPRESSED RURAL AREAS
John D. Whisman 223

THEORIES OF REGIONAL GROWTH

Charles L. Leven
University of Pittsburgh

The general subject of this paper will be the determinants of theories of regional growth. Many people are interested in the question of regional growth; essentially they are interested in the question of what it is that determines the rate of economic growth of a region and, in particular, they are interested in this in the context of what is it that makes one region grow faster than another. This is in the United States quite a familiar area of concern, with Appalachia as the best current example of a regional problem. Somehow or another Appalachia is regarded as a "depressed area." It is an area which has not had economic performance equal to that of other regions, and the United States now is embarked on a fairly massive federal program to underwrite capital development in Appalachia in the hope that this will stimulate economic growth there.

The "underdeveloped region" problem is apparent not only in the United States, but in most developed countries and even some underdeveloped countries. For example, in Venezuela there is considerable discussion of the differential rates of development between the coastal cities of Caracas and Maracaibo which have had heavy industrial investment, relatively high wages, and high earnings, as compared to the situation in the southeastern region, which has a suitable climate and natural resource base, but has had very little in the way of economic development. Similarly, in England one speaks of the Midlands problem; the problem of adequate economic opportunity in what traditionally was a coal and heavy iron working area. These activities now have been importantly displaced by considerable advances in productivity, with a consequent release of manpower. In Italy people talk about the Mezzogiorno problem, the problem of the South. The differential in development between the industrial cities of the north like Milan, and the relatively low rate of economic development of the South, say below Naples, has been significant. In Poland one could refer to the differences in economic performance in the eastern and western regions, which is marked by differentials in output per worker in both the agricultural and industrial sectors.

The foregoing examples are meant to illustrate that lagging regional development, the existence of regions that are underdeveloped relative to their national economy, is a frequent matter of concern, and a matter of concern not only at a theoretical level, but also among people concerned with formulating development policy. Interestingly though, the absence of any articulate theory has not produced a lack of suggested development policies. In fact, the number of things that have been suggested is very large and there is considerable debate as to which should be undertaken. People talk a good deal about investments in social overhead: building roads, building dams, draining land, reforestation, and so on. Then there is a lot of talk about investing in education, not only capital facilities, but also subsidizing current outlays. One of the notions underlying such suggestions is that a large part of the reason for underdevelopment may be that many people have inadequate educational experience--they are not adaptable or flexible. The skills which they have are either at a very low level or obsolete and their ability to acquire new skills is low. Other sorts of policy suggestions lie in the area of industrial promotion, product promotion, creating industrial parks, publishing brochures describing the benefits of the region, enticing industries to locate there, investing money in technological activities to try to discover new uses for resources of the region, and trying effectively to market the products produced by the region or to find new products that can be made in the region.

In short, there would seem to be no shortage of things that people are willing to suggest to improve a relatively underdeveloped region, nor is there any substantial area of disagreement as to which areas are and which areas are not underdeveloped within a national economy. Most people agree that Appalachia is an underdeveloped region and most people have suggestions as to what might be done to reduce its differential with the rest of the United States. The problem, of course, is deciding which of the many possible policies should, in fact, actually be undertaken, given limited time, money, and effort. The point is that the problem is not identifying some things that might help; the problem is really an economic one of choosing among a wide variety of things which might help, those things which one feels fairly sure would help. And at this level there are considerable differences of opinion.

Now I would like to approach this situation from the standpoint of trying to appraise policy recommendations for underdeveloped regions. What sorts of things might be done to reach an objective appraisal of development policy when so many policies seem to be recommended by so many people; in short, whose advice should be taken? The argument that I wish to develop is that the rather wide variety of possible development policies can be grouped into a limited number of categories, and that these would relate to a limited number of alternative hypotheses about what determines regional growth. Moreover, these alternative hypotheses would relate to a limited number of theoretical concepts, usually implicit rather than explicit, as to what it is that makes a region develop. Finally, these alternative theoretical concepts, in turn, are related, to a considerable extent, to alternative concepts of what is meant by economic growth or the level of regional development.

Let me illustrate. Up until now I have been talking very loosely about economic growth and regional development without ever specifying precisely what I meant by these terms. But it is clear that referring simply to "growth" or "development" is highly ambiguous. These terms will mean different things to different people. Essentially I think that there are three major kinds of interest in, and correspondingly three concepts of what is meant by "regional development." For convenience let me talk about three different kinds of people with three different kinds of interest in regional growth and development, even though in any actual situation a particular individual might display more than one kind of interest.

First of all, there are people who might broadly be characterized as self-interested. These are individuals who have a personal vested interest in the economic development of the region in which they live. Institutionally they would be characterized as local civic leaders, local government officials and by representatives of locally oriented decreasing cost industries. It is not very hard to see what the interest of these people is and why they are in favor of economic growth and development.

There would be two characteristics of their interests. One would be political; certain governmental officials would be interested in a growing economy, simply to enhance their own political importance. Besides this, people with business interests would be interested in selling larger amounts of goods and services. This would be most important in firms whose market is primarily within the region and probably who have at least constant returns or, hopefully, increasing returns to scale; public utilities, financial institutions, newspaper publishers, retail merchants, landowners, building contractors. These are the kinds of people who usually are active in local development organizations and the types of people who usually sponsor conferences on growth and development. Essentially it would seem that the regional parameter in which these people would be interested is aggregate demand for goods and services in the region. And so for them, regional development means an increase in the region's aggregate income. This increase in income could take the form either of an increase in the average income of people working in the region or an increase simply in the number of workers in the region, their average income remaining the same. Also, since these people are usually employers, rather than sellers of labor, they tend to be interested mainly in increases in aggregate income that are not accompanied by increases in wage rates. Thus, they tend to fix their interest on increases in aggregate employment and the thrust of their recommended policies tends to be directed at measures for increasing the number of available jobs. They see in an increase in the number of jobs, essentially with wage rates remaining otherwise the same, an increase in the aggregate demand for their output, with no increase in their cost of production; the best of all possible worlds for them. As indicated above these are mainly local self-interest groups, although there are some theoretical underpinnings for this point of view. The main thrust of most economic base thought would be consistent with this view of the world. Essentially, it represents the notion of export or die--what must be done is to get more factories to locate here or more resource exploitation. Such views are held by many American geographers, some planners, and a few economists.

There are also a second and a third group of people interested in regional growth. Both of these groups, however, tend not to be self-interest groups, but rather people with a social science interest in the region. They are interested in the region's performing well as a social or economic organism. But there are really two classes of people under this heading, and the first of these, the second group of people that I want to talk about, are the people whose concern is focused on what might be called individual equity, within an aggregate economic welfare context. When these people look at economic development within a region, apparently what they look at is not the aggregate income, but the per capita or per family income of the region. From their point of view, the end of economic performance is to provide a high standard of living and the success of the region depends upon, or is measured by its per capita or per family income. Now it should be obvious that it is possible to have increases in aggregate income without an increase in per capita income, and it is possible to have an increase in per capita income without increasing aggregate income, or both of these, or neither. And so we should not be surprised if these peoples' conception of growth is different from that of the self-interest group, and we should not be surprised if the kinds of things that they recommend are different. This second group of people would be drawn rather broadly from the social sciences in general. There would be many economists in this group, and in addition, I think that most urban sociologists would have this kind of orientation--they would be concerned with the quality of urban life of the average or typical person.

Finally, there is a third group of people with still another orientation to regional development. They would also be social scientists, and in this case almost entirely economists. Their main characterization would be as people whose measure of performance would be the efficiency of production. They would say that the regional economy is an institution which ought not to be preserved for its own sake, but only if it is consistent with efficient resource allocation. A test of its performance would be the efficiency of the spatial allocation of resources and what they would focus on as a test of such efficiency would not be a regional parameter which they would regard as desirable of maximization. Rather, they would be looking at the question of the efficiency with which production is distributed among different regions, and a test of this would be the degree of equality of factor prices among different regions. They would regard differentials in wage rates in excess of differences in real costs of living and in excess of those differentials which could be explained by differences in the mix of individuals involved as prima facie evidence of inefficient spatial allocation. In other words they would look at differentials in wage rates for particular kinds of labor and say, that except for differences in costs of living, that the perpetual maintenance of interregional differentials is manifest evidence of inefficient allocation and that convergence of wage rates would be evidence of efficiency. They would also be interested in interregional differentials in rates of return on capital, as well. Theirs would not be so much a concern with growth as it would be a concern with efficiency as such, though they would admit the possibility of a lagging region. In such a case they would look at a region that had depressed wage rates in particular occupations, relative to other regions, and on this basis they would say that area was depressed without regard to the region's aggregate or per capita income. And here again, rising wage rates could be consistent with either rising or falling total or per capita income. Also, their theoretical explanations as to the cause of relatively depressed factor prices would differ from the explanations of the first two groups and the policies they would recommend also would differ.

To summarize, the three groups of people whom I have characterized as the self-interest group, the equity advocates, and the efficiency advocates would look at three different criteria in assessing a region's development. The first group would fix their attention on aggregate regional income, the second on per capita regional income, and the third on the differentials of specific factor prices in the region over those in other regions. Thus, we see three groups of people for whom the concept of the level of regional development has markedly different meanings, and it should be no surprise that their theoretical explanations of what causes these differentials probably are different.

The first group of people, those who are interested in aggregate income, for the most part would be likely to formulate what could be called an aggregate demand explanation for regional growth; essentially these are the economic base adherents. Basically, they would argue that a region does better if, and ordinarily only if, the market for its goods outside the region expands. Such a notion, of course, simply is a particular case of the standard Keynesian foreign trade multiplier concept, with internal investment all induced.

The second group of people are not likely to look in this direction. They would recognize, of course, that to be sure where a region's export demand is low it is likely to be poor, but they would look at the cure for low per capita income implied by the economic base idea of increasing export demand as rather hollow. It would be like saying that the cure for poverty on the part of an individual is to look for a higher paying job. The presumption is that if a higher paying job were available the person probably already would have looked for it. Similarly, the presumption here of the "equity advocates"--the second group--is that selling goods and services outside the region is very important to many people in the region, that they are already stimulated to do this, and if it were possible for them to sell more, they probably already would be doing so. In other words, simply to say that increasing sales abroad will raise income is, perhaps, somewhat beside the point, the real question being why it is that the sales are as low as they are. Here they would conclude that this is likely to be the case because the productivity of factors in the region is low; that their ability to compete in external markets is low. This would suggest that the cure for low regional per capita income is to be found in measures designed to raise factor productivity. And this would be likely to lead to explanations of the present low level of productivity in terms of investment efficiency. Either private capital is deficient--old and inefficient plants, archaic and poor technology, poor management--or there are deficiencies in worker efficiency, stemming from poor education, poor health, or deficient social aculturation or motivation--or, there may be inadequate social overhead capital; transportation facilities may be deficient, with high costs of moving goods and people in and out of the region, there may be undue congestion, with lack of sanitation, poor housing, poor public facilities. Moreover, the people who are free to choose where they want to live are likely to be the highly skilled workers whose services are in high demand. Thus, the lagging regions, which so need a larger share of highly skilled labor, are just the very places which such people avoid and so the problem is compounded and the solution frustrated. The main avenue of escape which the "equity advocates" are likely to see is enhancement of the stock of capital, both public and private, both human and physical.

The third group of people, the "efficiency advocates," might look even a little further and they would say that if a region is poor, it probably has difficulty in selling its goods outside the region, probably because it has difficulty competing with other regions, probably because it is an inefficient, high-cost producer, probably because it has low factor productivity, which is probably because it has had insufficient investment, which then leads to the question of why, at least in a free market, people have not invested more in the region. Here they would say that people have not invested for one of two reasons. Either the real payoff to the investment is small, in which case the efficient equilibrium solution is for this region to disappear, or at least to decline, as a production point, and for other regions to take its place. The other reason would have to be that the market for interregional capital and labor allocation is very inefficient. We know that capital does not move from region to region with complete freedom. There is lack of knowledge, an uneven distribution of financial institutions, with imperfect people with limited knowledge, information and perspective running them, and who to some extent follow tradition. More importantly we have imperfections in the movement of people from region to region, sufficient to prevent an adequate balance in the spatial allocation of labor with appropriate capital-labor ratios in all regions. People have a lack of knowledge as to employment opportunities elsewhere. Also we have all kinds of institutional restrictions in the labor market, such as minimum wage regulations, trade union seniority, the vesting of pension rights, all of which inhibit movement. In short, this group would say that the reason why interregional differentials in factor prices persist over time is because the spatial allocation market for both labor and capital is highly imperfect. Essentially they would look to market imperfections as the primary cause, and their removal as the primary cure for equating rates of return to factors of production in different regions.

Up to this point, this paper has attempted to trace what seem to be the three dominant concepts of what it is that makes one region grow at a different rate than others. One view is that relatively low growth in aggregate income is the result of lagging aggregate export demand. The second view is that a relatively low level of per capita income stems from relatively low worker productivity, which, in turn, is a function of inadequate public or private physical capital or human capital. The third view is that persistent interregional differentials in factor prices, over and above such differentials as can be explained by differentials in investment risk or the cost of living, are the result of imperfections in the spatial allocation market for labor and capital. Thus, we can see three distinctly different theoretical strains, each arising out of somewhat different concepts as to the particular developmental parameter that is most important. At this point I would like to look behind these theories a bit, and consider the sorts of behavioral hypotheses that would be consistent with them.

Let us look first at the aggregate demand theory. Let me say once again that this is drawn directly out of economic base theory and is intimately related to most of the literature on regional accounts. Most regional accounts, at least in the United States, look very much like the national accounts in structure and form. This is not really very surprising because they are essentially empirical implementations of an aggregate demand explanation of long-run growth and development. The national accounts, of course, are essentially empirical implementations of another aggregate demand theory; the Keynesian theory of short-run cyclical fluctuation. Such aggregate demand explanations are probably very appropriate for explaining cyclical fluctuations, within the context of fixed technology and a fixed stock of resources, but they are not especially useful in explaining long-run growth under conditions of variable resource development and variable technology. Traditional Keynesian theory is not very helpful in explaining what is going to be the rate of invention or innovation, nor does it say much about what might happen to labor productivity over time. In short, if within a typical Keynesian framework one asks what will be the equilibrium level of per capita income ten years from now, assuming that the rate of technological advance, the rate of resource discovery, the rate of population increase, and the quality of the labor force are all variable, one does not get a very adequate answer. It is not the fault of the theory, however, that it does not answer this question. It was never designed to do so. It is perhaps somewhat unfortunate that the early work in regional analysis, including my own, was built so heavily on this kind of framework, one which was really meant only to analyze cyclical fluctuations. It borrowed this framework and tried to use it to explain long-run secular growth.

In any event, if one assumes the aggregate demand explanations as being a valid explanation of regional development, or the lack of it, what kinds of behavioral hypotheses would be consistent with such a theory? To give my own answer, it would appear that there are two. Let me call one of these the "market hypotheses," namely the hypothesis that there are external markets for the products produced in the regions which are not being fully exploited for a variety of reasons. Somehow or other, the hypotheses would run, more could be sold than the current amount. But, one might ask, how could this be the case? One explanation, of course, is that more could be sold if production costs were cut; but that really gets us into the productivity explanation. The pure aggregate demand notion would say that such sales could be expanded without any fundamental investment in the region. It would lead to such policies as promoting the products in the region, it would assume that in some sense people either are unaware of the superiority of the region's products or their tastes can be changed. Obviously the "market hypothesis" may be a valid one, at least in some instances. The one point that I would make, however, is that in an interregional context it would represent something of a zero-sum game. To the extent that people buy more of one region's products, they are probably going to buy less of some other region's, at least other things being equal. And even in the case where one region might gain there is no reason to expect any convergence, necessarily. Regions which are less well endowed would not necessarily gain at the expense of the others. In fact, if anything, it might serve to widen the differentials if any of the other hypotheses discussed below are at all true.

Another policy that would follow from the "market" hypothesis is a search for new product possibilities with existing resources. The classic case would be where there is a vacant factory or a plant which has gone out of business. Technical experts could be employed to seek out new opportunities for such facilities, perhaps with locally available raw materials not now being fully utilized. Will this approach work? Obviously, it might. But one must avoid the assumption that the more one pursues such policies, the more successful they will be. In short, possibilities that might exist along these lines are likely to be limited in the possible success they could achieve.

A third implication of the "market hypothesis" might be to look for new resources or new technologies. Again, there is no reason why such policies might not be successful. The main problem here is that the technology of discovering technology and resources is such that it is not at all clear that one can be sure that the benefits of the discovery will necessarily be enclosed within the particular geographical region which is expending the resources to discover them. In other words, one cannot set people out to look for things in North Carolina. They can be sent to look for oil or for coal or something else, but whether they will find them in a particular region cannot be determined in advance. The same is true of the discovery of new products. There is a reasonable assurance that if one invests sufficiently, new products can be developed, but there is relatively little assurance that the region undertaking the product research necessarily will have a comparative advantage in the production of the new products. So with the "market hypothesis" one could promote a region's products, look for new products to make with existing resources, and look for new resources and potential new products. All of these policies might be highly successful, but all of them are likely to be limited in their possible success; and in any given case there can be no guarantee that the possibilities may not be quite small.

Another hypothesis consistent with the aggregate demand theory is what I will call the "ignorance hypothesis," namely that there are producers existing in other regions, or perhaps not yet in being at all, who could profitably locate in this region, but who are unaware of this opportunity. This hypothesis would lead to straightforward policies aimed at industrial promotion. In a capitalist economy this would represent appeals to large corporations telling them how wonderful a region was and how they should move their plant there from some other region, or why they should open a prospective new branch plant there. In a centrally planned economy, I imagine it would show up in discussions on the location of new industrial facilities. Here again, there is no reason why such policies might not produce real regional gains, to some extent. But I would like to make the point, however, that their success would depend on an existing disequilibrium in the existing location pattern. True, at any given time, some production locations will be nonoptimal and if more information is supplied some of them will rearrange their location and the region may benefit; or perhaps, be harmed. Also, in this case, it is not quite a zero-sum situation, in that the resultant location pattern presumably would be more efficient and there would be some resultant increase in gross national product; transportation and/or production costs would be reduced in the aggregate. However, once everybody has complete information and a considerable amount of time for adjustment has passed, there may still remain considerable differentials in regional income which may be due to something else. In other words, it may be to the advantage of both the region and the nation to make industry more aware of relocation possibilities, but one should not be surprised if not much interregional convergence occurs as a consequence.

The second group of people, those who look to lagging productivity as the main cause of low regional development, would certainly agree that both the "market hypothesis" and the "ignorance hypothesis" were representative of real behavior. The policies that would stem from those policies might work, they would also agree, but they would feel it is important to emphasize that they are not policies which necessarily would work, at least to any specified extent. In other words, after one exhausted the possibilities under the hypotheses suggested by the aggregate demand theory, there might still be considerable interregional differentials remaining and the equity advocates would say that these were due to low productivity. If a region has persistent low per capita income, they would probably conclude simply that it was deficient as a production center. More than that people just haven't heard about it or that they have not discovered the right marketing techniques, etc. it would probably be that what it offered in the way of human and physical capital was just lacking. And, they would go on, the only way to get rid of these deficiencies would be to invest. This certainly is not a very surprising theory. What it says is (1) that the cause for low development is capital deficiency, (2) that the remedy for the deficiency is to make large investment outlays, incurring a good deal of debt and risk, and (3) that the policies may not pay off. There is no a priori assurance, at least with present knowledge, that any region's development is necessarily viable. The funds may be invested without any real payoff resulting. But, unfortunately, it simply may not be possible to provide for an adequate increase in per capita income in all regions without the undertaking of such risks. Of course, as a matter of national policy in the United States, we recognize that in a given region people may not be willing to undertake these risks, and they may have to be assumed by the national government, as in the case of the recent federal Appalachian redevelopment program.

The third group of people, "the efficiency advocates," would have a theoretical conception which would really not be oriented toward explaining why one region grew faster than another, but rather one which, in equilibrium, would call for no interregional differentials at all in factor prices, except those due to differences in the cost of living and some differentials due to real differences in factor quality. In a market economy, they would argue, that if any factor of production were making less than it could earn in an alternative location, it would move to that location, at least in the long run; and even over shorter periods of time one ought to observe a continual convergence toward equality in response to profit motivation. Growth of the whole system of regions would depend upon the rate of investment, invention, and resource discovery, but in a perfectly competitive market this would be diffused throughout all regions and any temporary differentials would tend to disappear. Confronted with evidence of persistent regional differentials over time, they would have to conclude that the differentials were due to imperfections in the spatial allocation market as indicated earlier. The behavioral hypothesis underlying the theory, of course, is a perfectly competitive response to profit and income opportunities on the part of all factors of production although they would admit that such motivations could be frustrated due to imperfections. These imperfections would be of two types. First, there would be institutional barriers which would include various restrictions on worker mobility as a consequence of trade union contract arrangements and also such things as the absence of perfect information on available alternatives. In addition, there would also be immobilities inherent in the nature of the productive factors themselves. The most important of these would be the relative immobility of much physical capital, once put in place, and immobilities of human resources as a result of climatic, family related, and other noneconomic locational preferences. Also, one might note the effect of wide-spread home ownership on limiting geographic mobility.

In the absence of these kinds of imperfections, of course, the "efficiency advocates" would have no regional development policy at all. Such policies as they would be willing to advocate would be directed at the enhancement of factor mobility _per se_. They would probably advocate such things as the removal of trade union restrictions, improved information on job opportunities, enforced distribution of all corporate profits so that new investment would have to meet market tests, and perhaps even some policies directed at equalizing tax burdens on business property and the socialization of the risks of home ownership.

To sum up then, I have tried to point out that there are essentially three kinds of interest which people might have in regional development. First, they might be concerned with their own economic or political opportunities. Second, they might be primarily concerned with the average level of living of the inhabitants of the region. Third, they might be most concerned with the efficiency of the spatial allocation of resources.

Further, these three distinct interests would cause them to focus on three different parameters of the region's economy, aggregate regional income, per capita regional income, and interregional differentials of factor prices, respectively. These three different views, in turn, would lead to three different conceptions of the causes of differential regional growth: an aggregate demand theory, a productivity theory, and a market imperfection theory. And these three theoretical concepts would lead to different behavioral assumptions as well. In the first case the "market" and "ignorance" hypotheses, in the second case a "chronic investment deficiency" hypothesis and in the third case a "profit maximization" hypothesis. Finally, these three separate schools of thought on regional development, not surprisingly, would probably recommend regional development policies which, though not always in conflict, would rarely be totally complementary.

Unfortunately at this time we really do not know which of these hypotheses is the most valid. In fact, one would probably suspect that they are all partially true. However, the extent to which one would dominate over another would have an important bearing on optimum development policy for any particular region. Moreover, we should be prepared to discover that the relative dominance of the alternative explanations probably differs from region to region and from time to time. Obviously, a good deal of further research is needed to determine which of these explanations would, in general, be the more important, if such generalizations could be found, and to determine the extent to which the relative importance could be predicted from particular characteristics of a region or set of regions. In the meantime it is hoped that a more explicit recognition of the possibility of conflicting views at a very basic level, may shed some light on the frequent controversy centering around the formulation of actual regional development policies in particular situations.

INTERDISCIPLINARY ASPECTS OF THE THEORY OF REGIONAL DEVELOPMENT

Mary Jean Bowman and C. Arnold Anderson
University of Chicago

The theme for this conference is awesome and the topic assigned to us a snare for reckless academics. Nevertheless, while welcoming the challenge to take a broad and speculative look at the emerging canons of professional judgment on regional change, we are grateful that Professor Maddox did not ask for "an" interdisciplinary theory. We doubt that such a thing can exist. On the other hand, the definite article, "the" theory, is a poser, for the more one explores this vast domain the more theories he encounters. However, we will attempt to delineate an interdisciplinary approach to theoretical analysis of regional development.

Interdisciplinary Foci vs. Interdisciplinary Constraints

Our first step was to make an extended tour of diverse scholarly endeavors. The roll of names and places we have visited is as resounding as the roster reeled off by Thomas Wolfe--an appropriate name to mention here. We have visited or revisited, among others: urban primacy and colonial outpost city, "cities as systems within systems of cities,"[1] export bases and multipliers, industry complex linkages and agglomeration, input-output matrices (internal and external), differential and proportionality "shifts," potential and gravity models, communication fields, and "poverty." And we have renewed an old old acquaintance: regionalism--its pleas, mythologies, and politics, so characteristic of, though not limited to, the American South.

We bring back no Baedeker and present no travelogue. Though exhilirating, such journeys into time, space, and thought are humbling; so many men are more knowledgeable about most of these places than we. Indeed, there is already a large Baedeker to much of this land we have toured, written by Walter Isard and his associates.[2] It is cast in a social accounting framework much of which is concisely summarized for this workshop by H. A. Green, who has done the job far better than we could. Almost anything we might suggest, Isard and his coauthors could claim to have "taken into account," at least implicitly if not "operationally." But it is evident immediately that however wide their swath, the authors of Methods of Regional Analysis have looked at everything primarily with the spectacles of an economist or the economist-planner. This shows up in the foci of the "social accounts," the components of the "consistency" themes, and the designations of usable or "operational" variables and correlations. Their first three models or frameworks, which they term "channels," are explicitly described as "fused frameworks which place emphasis upon economics--upon the attainment of efficiency and profit maximization." Recognizing that these three frameworks, even as fused, "obscure the fundamental roles of values and goals" they introduce Channel IV in which the "central emphasis is on values and goals." But they go on to assert that Channel IV lacks the operationality of Channels I-III and implicitly concede that as they conceive it even Channel IV retains an economic focus.[3]

---

[1] See the article of this title by Brian J. L. Berry in John Friedman and William Alonso (Eds), Regional Development and Planning, Cambridge, M. I. T. Press, 1964. The basic idea of systems of cities is of course common to much current writing in geography.

> "The conceptual nature of Channel IV is most evident when attempts are made to set limiting constants for attitude constraints, and for a number of financial, stability, and minimum standards constraints which are primarily oriented to attitudes and behavior. Limiting constants for economic-type constraints . . . are more easily established."

Having arrived at this point, Isard and his associates turn to Channel V, which is "Channel IV reduced to manageable size." This entails a pulling back to economics as secure ground, modified only by a few concessions to so-called "noneconomic" constraints; most of the interdependencies among economic, social, and political aspects of change fade out. In Isard's words, with which we must all agree, "the integration of political, social and economic values which are involved, and which must be ultimately confronted by all general social science theory is still far distant."

Isard and his confreres are far too sophisticated to confound a disjointed collection of findings, methods, and models from the various social science disciplines with an "interdisciplinary" endeavor. They were striving for fusion or integration. But in what sense are the constructs used in even their broadest social accounting models genuinely "interdisciplinary"? How far does their injection of so-called "noneconomic" constraints differ from assumptions and empirical observations concerning propensities to consume (in aggregative income analysis) or the shapes of marginal and average physical returns in the theory of the firm? Are "propensity to consume" and technical production functions "economic" whereas Ford's security attitudes associated with poverty are "noneconomic"? We suggest that as soon as a relationship (by whomever it may be determined) is introduced only as a parameter or a constraint in an economically defined problem, the theory is an economic one. This must be the case so long as "development" is itself defined in solely economic terms--whether the economic foci are Leven's aggregate income, per capita income, or efficiency of spatial resource allocation. Thus far, at least, social accounting frameworks have had this character. Perhaps such a framework is not the sole dependable route to analytical integration or the most solid foundation on which to construct schemes for understanding development or deriving policy proposals. Just as the economist bewails the political forces that divert policy from paths consistent with economic logic, so another social scientist might lament the way narrow economic presuppositions of policy as conventionally accepted throttle the "great society" whether or not they facilitate the "affluent" one.

---

[2] Walter Isard, et al., Methods of Regional Analysis, New York, Technology Press of M. I. T. and John Wiley & Sons, Inc., 1960, p. 720.

[3] Ibid.

Concerning the Meaning of Regional Development

Each contributor to this conference was asked to indicate, on his topic, (1) the state of our knowledge, (2) the gaps in that knowledge, and (3) research suggestions to guide policy. No one can possibly add up what is known and not known of regional development (however defined) across the disciplinary fronts. Even what little we ourselves know could hardly be summed up in one paper--let alone what we don't know! But there is one often neglected fact we know absolutely and that is of critical importance as soon as one speaks of either interdisciplinary orientations or guiding policy: the notion of neutrality with respect to the roles of an economic researcher serving policy agencies is an illusion. Economists are not neutral in their effects, ever, and to believe otherwise is to evade responsibility. Theoretical constructs and sophisticated (or even less sophisticated but prestigeful) methodologies have a life of their own, even though their impact may not always be the expected one or consistent with what the economist deems to be the logic of his analysis. The very definition of priority goals is commonly biased by what the economist's tool kit can most readily deal with. For the moment, however, we stress only that to attempt an interdisciplinary orientation to "regional development" requires a supra-economic view of societal processes and of societal and policy goals as aims, not merely as confining conditions or constraints.

In sum, productive interdisciplinary discussion of regional development must begin with a conception of "development" that can transcend the limits of conventional economic analysis on the normative side and avoid the confinements of disciplinary pre-occupations in the positive analysis of societal processes. As a first step we therefore define development neutrally as cumulative change that alters the patterns and structure of the society in both space and time. In this definition, development is not necessarily "good," it could embrace subregional decline and decay and is certainly not identical with "growth." Neither is it just change. As a cumulative process "development" follows vectors that are partially interdependent and pay no respect to the conventions of academic disciplinary distinctions. Taken as a whole, development in our definition will be irreversible, though its component elements need not all change monotonically.

"Regional science" in its more dynamic orientations is the study of spatial patterns of concentration and dispersion, of stocks and flows, in just such a broad context. Each regional scientist may select a particular aspect and delimit his concept of development accordingly. But the geographers, an interdisciplinary brotherhood themselves, provide the most adequate bases for an interdisciplinary approach to the spatial analysis of interrelated processes of cumulative change, and hence to "regional development." Their concerns with trait clusters and spatial interrelationships encompass the political, the economic, and the cultural--together with communication and flows over abstract, not merely banal space.[4]

The open neutrality of our initial definition of "regional development" and its multidimensionality is a weakness as well as a strength. In fact, even the broadest geographer delimits the concept, as he must for fruitful research, but in doing so he often cuts across disciplines. Thus development may usefully be defined as the progressive functional integration of clusters of specialized activities in space--political, economic, and social or "cultural"--over and within progressively wider areas. "Development" in such a definition is no longer totally neutral; it has direction. One can meaningfully ask what are the processes and forces that may foster or hinder such development, under what conditions, in what patterns, with what timing? One may also view spatially integrative development or selected aspects of such development as societal or public policy goals. We will refer back to this concept of development later, when we suggest one or two particular (not "the") interdisciplinary orientations to regional development. But we can no longer postpone discussion of what is a "region."

---

[4] The distinction between various sorts of abstract as against "banal" space is a very fundamental one, analagous to concepts of "social distance" in sociology. For a generalized statement and a discussion of related political and ideological problems see Francois Perroux, "Economic Space: Theory and Applications," Quarterly Journal of Economics, vol. 64 (Feb. 1950).

Concerning the Nature of "Regions"

The most casual perusal of the literature demonstrates that the only common meaning of "region" is a contiguous geographic space that is larger than "down town" but smaller than the world: Pittsburgh city-region, Upper Midwest, Mountain States, Appalachia, East Kentucky, East African highlands, or Europe, "the East" etc. If we are going to talk about "regional development," we have to say something about what kinds of regions we envisage and how this may relate to meanings of "regional development."

Any national system of "regional accounts" such as Isard and his associates would construct requires that every area in the nation be assigned to one particular "region." Furthermore, such accounts, which incorporate activity flows through space, must identify and bound a limited number of areas if they are to be computable. Thereby regions are delineated pragmatically and operationally. Ideally the boundaries should emerge from the analysis, and the Isard group look hopefully to factor analysis to provide such identifications, but their requirements of complete coverage and set boundaries impose unreal and misleading constraints on the mapping process. Furthermore, what we learn from a factor analysis depends upon the variables put into it, and that technique does not free us from the need to scrutinize what useful meaning might be given to the term "region."

Some of the most widely used criteria for identifying a region appear at first glance to be flatly contradictory--homogeneity within the region versus internal specialization and interdependence that make of it an integrated area. When an economist (following North)[5] starts with a homogeneity criterion, he will usually look for a dominant export base; such "regional" identification applies best to highly specialized frontier or peripheral regions that are as yet little developed or that lack potential for diversified production. One could go on to break up space indefinitely into smaller export-base units, but that would be to generate so many regions as to make the concept unworkable and essentially meaningless. A single or a few exports from an extended contiguous area implies homogeneity not only in outputs but also in social and political institutions and cultural inheritance; for example, the old cotton South, the coal fields of East Kentucky, or the cattle ranges. But in many such areas the notion of homogeneity of social structure can be equivocal; a region may be homogeneous in having a distinctive social pattern repeated from one subarea to the next, yet in each subarea social status and occupations may be polarized between groups that face each other across an unbridgeable gulf. Still taking "homogeneity" as the starting point, one can abandon the common export base completely and speak of cultural regions, following the anthropologist. The Deep South and the East Kentucky coal field could qualify either way, though the former is moving toward economic diversification and also, however slowly, toward the national societal status system.

---

[5] Douglass C. North, "Location Theory and Regional Economic Growth," Journal of Political Economy, vol. 63 (June 1955).

Starting from a quite different perspective, it has been contended that East Kentucky is not a region, and even that Appalachia as defined by PARC is not a region. This is to assert that those areas are neither now nor potentially units whose functionally structured spaces are more interactive internally than they are dependent upon external foci. Economically East Kentucky is oriented to "the outside" and major parts of upland Appalachia are not hinterlands of the Appalachian valley; if they "belong" to any potentially integrated spatial structure it must be as hinterlands of the manufacturing belt to the north and west or the developing areas of Virginia, Georgia, and Alabama. There is especially good reason for insisting on these orientations when one's concern is with "regional planning."

By this analytical-planners view, then, a region is a system of interdependent and mutually supportive areas--at least potentially. In developed form a region is a functionally specialized system of central places in which the nodes of urban hierarchy and the interstitial areas or hinterlands are all integrated. Unless they merge fully into one national space, such regions are marked off economically from one another by a higher frequency of internal economic interaction around individual higher-order central cities, and especially by intensive internal interaction within the hierarchy of residential industries. Such regions may or may not be further characterized by individual historical-political or social legacies that persist despite changing spatial distributions of economic functions. It would seem to follow that a strong cultural-political legacy will retard the pace of spatial reorganization, as Nicholls has so persuasively demonstrated for the South.[6] These most complex kinds of regions are characterized at once both by their homogeneity and by their heterogeneity. The homogeneity is mainly cultural and political, even though its historic roots may be economic as well.

Internal economic interdependence and specialization, it should be noticed, though implying intensity of economic interaction, carry no parallel implications as regards degree of internal social or political integration outside of a limited subpopulation. Intensities of social interaction for the majority of residents need have little relation to degree of urbanization in the demographic sense. In this fact lies one of the more serious limitations upon an economic approach to policy making for regions, but also, we would argue, one of the challenges and opportunities in strategies that are supra-economic in compass.

The islands of cultural isolation within metropolitan areas, islands that have grown with the migrations since the war, are familiar. Yet it is to cities that we must look as sources of "high culture." Cities provide the centers of innovation and ferment, the foci where new political or social or cultural or technological ideas and movements culminate.[7] Salient differences among nations and regions lie in the extent to which nuclear cities spread their influence back into the hinterlands and also in the characteristics of the hinterlands that nourish the cities. One can indeed identify an underdeveloped nation or region by the limited communications between the city and its hinterland, by the preponderance of locally organized activities. Taking into account the vertical dimension of social space, cities differ also in the degree to which innovations are assimilated by the bulk of their residents.

Beyond the closer urban hinterlands, interstitial areas in a developed nation may be caught in a limbo; they are neither self-sufficient nor sufficiently integrated with development nodes to insure a modicum of stability. Peripheral and interstitial areas that depend upon a narrow export base suffer the swings that plague small specialized nations. Furthermore, they may and often do face long-term obsolescence by virtue of technological change in the "outer world." Most of the rural chronically depressed areas in the United States today are obsolescent. Only a few have economic development potentials if by this we mean potentials for aggregative growth in income and/or employment. In most cases, even growth in per capita incomes may call for contraction in the aggregate. If economic development means adaptation to an area's relative potential, these areas are not economically underdeveloped, however "distressed" they may be.

---

[6] William H. Nicholls, Southern Tradition and Regional Progress, Chapel Hill, University of North Carolina Press, 1960.

[7] For an unusually effective discussion see John Friedman, "Cities in Social Transformation," Comparative Studies in Society and History, vol. 4 (July 1961).

But note that we have been speaking of "area" rather than "region." The potential of interstitial areas for the life of their future residents rests upon their integration into more viable regions. The frustrations of an ARA program that sought out the most hopeless areas for "designation" and then aimed at inducing economic growth should have been anticipated from the start. But the political processes that molded ARA paid little heed to what was in fact known; only belatedly is awareness spreading that wishes in these respects are not horses.[8] Parenthetically, we don't "blame" ARA staff for this; rather, they seem to have done a remarkably good job of operating with impossibilities. Fortunately Charles Schultze and others are bringing thinking around to a "growth point" orientation that can have much more promise--but that is very different indeed from focusing upon the areas of minimal potential.[9] Identification of potential "growth points" and their hinterlands take us from areas that could be "regions" only on a thin sort of homogeneity criterion to systems in space. But this suggests also that the most fundamental concepts may not be "regions" but rather "spatial structure," on the one hand, and "regionalism," on the other.

---

[8] On some of these dilemmas see Sar A. Levitan, Federal Aid to Depressed Areas, Baltimore, Johns Hopkins Press, 1964, and the review of Levitan's book by M. J. Bowman (forthcoming in the Journal of Political Economy).

[9] The "growth point" theme has been emphasized in much of the work on regional development in France and in Italy. See, for example, Francois Perroux "Note sur la notion de pôle de croissance," Matériaux pour une analyse de la croissance économique, Cahiers de l'Institut de Science Economique Appliquée, Série, D, No. 8, 1955; J. P. Boudeville, "Contribution a l'étude des pôles de croissance brésiliens," Cahiers, Série F, No. 10, 1957. The "growth point" concept is discussed by Albert O. Hirschman in connection with spatial transmission development from one country or region to another (Chapter 10 of his Strategy of Economic Development, New Haven, Yale University Press, 1958).

Opportunity, Communication, and Regionalism

In all of its variants "regionalism" is made up of attitudes or sets of attitudes that have a particular focus in space. To highlight the significance of these variants we will return first to a redefinition of development that stems from the geographer's view of processes of specialization and integration through space, starting this time with what is definitely a value orientation.

Let us define development for present purposes as the enlargement and diffusion among a population of opportunities to widen the range of experiences and satisfactions and to participate in an on-going national life. Regional development is then the extension of this process through an area that is regarded, from some point of view, as a "region." By this criterion, declining regions with limited economic potentials could still experience "development" provided there is creatively adaptive community planning and an increasing intensity of communication with more dynamic centers. But in the economically most depressed rural localities all elements of development, including this one, move ahead under severe constraints; this is why they are called "hard core problem areas."

Normatively this conception of development puts the emphasis on people. Natural resources are developed for people, whether to be used directly (as in recreation facilities, an attractive town center, etc.) or indirectly for production of other goods and services. People too are developed for people, including themselves, by processes that are structured in time and space. Education and the diverse agencies and processes of communication that trace out "information fields" in geographic and social space are instrumentalities by which perceptions, awareness, and opportunities are enlarged, diffused, and improved.

Education for "human resource development" according to manpower or job-potential criteria is only the most superficial expression of this viewpoint. To be sure, such training is vital for the spatial patterning of many other activities and underlies adjustments to change through migration and occupational mobility. But development as a social goal puts the emphasis jointly on environmental and human qualities and on the diffusion of participation, not merely on "productivity" or "growth" in the conventional sense. It embraces aggregate and per capita income or production only as those magnitudes are means to enlargement or diffusion of perceptions and experiences initially restricted to a minority in the society's or region's high culture.

This conception is not quite Benthamite happiness and neither is it just the vague betterment of man that was the hope of the enlightenment, but it has elements of both, enriched by subsequent broadening of our conceptions of human nature. Its implications come out in the whole contemporary sweep of thinking about learning among the culturally disadvantaged. It underlies the firm public support for the widening of the franchise in southern states.

We would contend that this orientation has positive as well as normative significance. Specifically, we maintain first that there is a correlation between the institutional factors that rigidify or open-up social-status structures and the pervasiveness of innovation in both physical and social space. Second, other things being equal, the more open the social system and the more extensive the channels of communication, the more rapidly will an economy grow, both in the aggregate and in its regional components.

Perhaps at this point we should be more specific as to some of the things that this conception of development entails and that it excludes (1) Both as a normative judgment and as an instrumental hypothesis it is opposed to elitist exclusivism, but this does not mean that it is unqualifiedly egalitarian. The incidence of knowledge, awareness, and participation is not random; there are leads and lags in the enlargement of horizons among and within groups and localities. As in apportioning material resources so in allocating social opportunities, random distribution fritters resources and throttles nodes of growth. This may be most critical in early stages of development, but even in more advanced settings one would not expect to find steadily declining social and communication distances among groups. New ideas and opportunities are continually emerging; the pace of change is always uneven; distances or gaps are always widening and narrowing in alternation. But each cycle rests upon its predecessors, and policies to decrease the lags in either geographic or social space can affect the pace of longer-run changes.

Though the conception of development we are using is not narrowly economic, it is not anti-economic. On the contrary, development in the aspect here being elaborated supplies the economic man with more information and wider opportunities. Noneconomists are all too ready to underrate the importance of material goods as a source of motivation and as the means to noneconomic achievement. But economists have been no less prone to set aside other aspects of activity (once they have announced that these other things are, of course, important but unmanageable); the effect is inevitably to play down the importance of the unmeasured. And economists have often been illogical as well as evasive in matters of diffusion of knowledge or of information, perceptions of opportunities, the empirical significance of ignorance, or the ways in which tastes and preferences are formed and changed. However reticent we may be about prescribing what others should value, the "economic man" needs an informational basis for his decisions (conflicts of social and private interest aside). There is, of course, the difficulty of deciding what resources may be devoted to the extension of perceptions and knowledge and who should pay for it given the initial ignorance of the immediate benefactors.

We propose the hypothesis that growth of GNP or of regional per capita income--or of the rate at which sub-populations make job and locational adjustments to technological change--is a function of the diffusion of knowledge and information widely and in some depth through both socioeconomic status groups in any given locality and over space. If so, this alone is sufficient reason for encouraging intensive study of the spatial and social structures of "information fields," of hierarchies of such fields, of how stable or unstable they may be through time, and of how they come to be (or can most effectively be) altered or enlarged.

Whether our perspective on development is consistent with "regionalism" depends upon the particular context and in some degree upon whether one is talking value-goals or about how changes in fact occur. There is an a priori presumption against regionalism at least in "the long run," because persisting regionalism is exclusive, inward-looking, politically aggressive, and economically restrictionist. Regionalism limits the exposure of populations to fresh ideas and constrains their theater of activities. Regionalism exemplifies the "container" conception of space that Perroux so cogently challenged. Moreover, regionalism may rest on strong foundations in tradition; it may encourage rigidities of social relationships within the region as well as screen out the rest of society. On the other hand, regionalism may be more passive and less aggressive, and it is not always a long-term affair. Regionalism may express the aspirations of an emergent group to break out of a confining situation, as in many parts of the underdeveloped world today. And sometimes it may contribute to its own demise. In our South we have observed for some decades the paradox of regionalist politicians seeking outside assistance and the entry of outside agencies, though such injections will undermine the distinctiveness from which the regional leaders derived their aspirations and support. All opening up of entry for outside communication and new economic activities undermines regionalism.

Recent East Kentucky history is interesting from this viewpoint, especially since the collapse of the coal industry in the early 1950's and the later floods. For some residents there has been an awakening, accompanied by a more vivid local identification, loyalty, and sense of community responsibility. Regionalism of a special mountain variety was virulent for a time and no visitor could miss the mentality of inside and outside, but the new self-consciousness has done more to open than to close the minds of the mountain people to the world outside their hills.

One can almost regret that to suggest migration no longer tars one as a betrayer, for in fact there is too little of hope in migration for many of those who remain. East Kentucky supplies a tragic lesson in the fruits of uncontrolled exploitation of physical resources and neglect of human resources. There is plenty of development potential for that area but it is the toughest of all to bring to realization.

Coming back from this digression into the Kentucky hills, we may classify regionalism into three main types:

(a) First, persisting regionalism, especially when combined with traditional elitist structures, is the antithesis of development. It is a separatism that rejects the values in the larger society on which the local leaders perforce rely for economic viability (where it does not completely inhibit the development of the larger society). And it resists virtually every significant widening of attitudes and awareness, every enlarging of the horizon of opportunities for the populace as a whole.

(b) Second, where regionalism is mainly an expression of a search for identity, it can facilitate a break-through into a more open and spatially extended society. This pattern is probably most likely where there has been political revolt, as in much of Africa. But it occurs also in our own back country under the stress of calamitous economic obsolescence that shocks a population into seeking a new way of life, as part of a larger and more nearly national social space. This sort of "regionalism" is competitive in a national context as well as locally prideful, and it can and does foster its own disappearance with progress toward fuller participation in the national life. It is clearly consistent with the development concept we have selected.

(c) The third type of regional self-consciousness may not properly be termed regionalism, for it is not expressed in the pressure politics of distributions of grants, investments, or control. We refer to the identification of a people with their own regional history and culture, and a desire to preserve its "best features," but without emotional resistance to "progress" and without foregoing active participation in the larger society in which most of the new ideas are spawned and nourished. This is a difficult path to tread, however. In practice this sort of regionalism might seem hard to reconcile with the development norm of diffusion of opportunity and participation among as well as within regions, for such participation tends to swing the balance away from the distinctive values of the regional heritage. On the other hand, only a scattering of activity foci through space can in fact maintain anything like a geographically diffused high level of participation in the national life, which brings us back to our development norm after all.

Rarely do economists face up to the tendencies of national economic integration to obliterate all local variations in social life, and even more rarely do they consider what this may mean to a society and even to its economic development. The tendency for all architecture, costume, magazines, foods, amusements, and political assumptions to flow out of the national economic-political capital is not one to be viewed as unimportant. If the widening of perceptions and of opportunities comes to mean accepting their content from a single source, the society faces a perilous future. Bemoaning of the atrophying of provincial cultures in England is not to be spurned as mere romantic nostalgia. Even more evident has been the stultifying effect of the dominance of Paris upon French life.

But all this plunges us into the very heart of how differential regional development gets started, of the strong historical determinants of its persistence and the difficulties in breaking through to vitalize nuclear centers of lagging regions even where the basic resource potentials would seem to be there. The hold of established agglomerations as development magnets is impressive and may sometimes be ominous, even though rarely absolute. So we come to the unprecedented efforts to initiate economic development in Southern Italy, the attempts in France to induce or force location of growth industries elsewhere than in Paris and its immediate environs, the "put it into the growth points in the laggard regions" strategy of a UN planners' group in Europe, and in our own refurbished and redirected area development approach. We have hardly begun, and so far neither the French nor the Italians have been successful. The scale of the complementarities or externalities required to form an effective nuclear center and the resistance of some of the essential components to "being placed" have proved too great. Literally, it may be easier today to move mountains than to move innovation against the dominant currents in developmental space. Meanwhile the thinking back of the philosophy of distributing economic nodalities into heretofore neglected regions remains at once foggy and dogmatically assertive. The result is likely to be too much wasteful subsidy to "regionalism," yet subsidy that is nevertheless too little because in a broader developmental perspective it comes too late. The pork-barrel that has gone with American federalism was certainly inconsistent with any sort of optimizing model, but it may have saved us from alternatives that would have been worse, even if more nearly "optimal" within the bounds of economists' equilibria. These thoughts and these events must give us pause in considering regional development strategies for emerging economies in which nuclear centers are less firmly entrenched.

There is of course a voluminous and growing body of publications on economic planning, and on regional science and regional development planning. But most of this work takes knowledge, preferences, and their distribution as "given" or as exogenously determined parameters. The addition of education to measured national or regional inputs, though an important addition, does not significantly alter the basic characteristics of the economists' constructs. Diffusion processes, determinants of tastes and values and their modifications, the interactive, creative forces of innovative change--all these usually remain outsiders, whether in a national or a regional and interregional context. There are a few tentative probes at the edges of these elusive problems, however--especially in the work of demographers on "urbanization," in a variety of analyses of migration, and in a few studies of the spatial diffusion of innovations.

The most prevalent of the modern methodologies used in these studies are the gravity-potential models. These may help (as Isard put it) "to achieve an adequate perspective on both agglomeration (spatial juxtaposition) forces and the behavior of social masses." But Isard's interest lay mainly in economic accounts and in filling in some empirical parameters for such accounts rather than in questions about societal processes or human behavior more broadly conceived. The work of the Lund geographers (particularly Hagerstrand)[10] in connection with information fields has a wider sweep than the related American work, yet with no loss of empirical testability. It is peculiarly well suited to dealing with diffusion of innovations, which usually elude us. The Lund studies include the historical dimension and allow for chance and uncertainty; by simulation methods they escape the rigidities of most previous gravity models. They have freed their approach from reliance upon transportation vectors by moving to the level of communication generally, and by demonstrating the congruence of diffusion of ideas to that of economic or technological traits. The models that trace out information fields include as their other essential components analysis of the conditions of receptiveness or "resistance" that determine which sorts of information and ideas will be activated at what pace, when and where. It is on what Hagerstrand termed the "resistance" side that the bulk of the work in regional science has been done, and this is where the economists come in with their efficiency and profit maximizing models (including some, like Zvi Griliches, that look at diffusion of innovations in particular); but economists will have to share here with sociologists and anthropologists.

---

[10] See the series of Lund Studies in Human Geography. For a short version of Hagerstrand's treatment of diffusion of innovations see Torsten Hagerstrand, in C. Arnold Anderson and Mary Jean Bowman (Eds.), Education and Economic Development, Chicago, Aldine Press, 1965.

Unbinding the Economist's Self-imposed Shackles

Summing up to this point, apart from introductory and incidental remarks we have been expounding a particular concept of development that could link the work of geographers and economists to that of sociologists or political scientists primarily by incorporating the extension of knowledge and the diffusion of ideas. This is to inject into the explanatory models the processes by which bases of private choices are defined and strengthened, tastes altered, and human potentials for socioeconomic adjustments and participation enlarged. Normatively, all this could have been conceived as a social extension of conventional economics that does not question market models except on the information and human quality side. But these are important exceptions that challenge economic planners in several basic respects.

First, they introduce a dynamic distribution norm: maximal efficiency in the diffusion of rising opportunities. This is not to be confused with minimum income constraints, which are widely recognized by planners, whether or not built into their working models. Neither is it to be confused with absolute goals of equality of opportunity, which can never be truly operational. The distribution norm we suggest is concerned with societal processes, not end states.

The second challenge we have already specified: the challenge to the economists' disregard for ignorance as it affects decisions and their disregard of how values and tastes are formed and changed. The Benthamite deference to individual preferences that is built into modern economic accounting models, as into conventional normative theory, is not nearly so pure and neutral in its real-world applications as economists who fear contamination by subjective judgments may wish to believe.

Third, economists are wont to disregard or to set aside as unobjective or beyond their sphere of professional competence all values and preferences that entail vicarious satisfactions or that might be subsumed under what one of us has labeled "benefact criteria," to which we return shortly.

Fourth, we must note briefly some omissions and biases that are more often given explicit recognition by economist researchers and planners, and have comparatively little direct relation to our main theme. These reflect the aspects of development that can be most tidily fitted into accounting or programming models. Some of these can be summed up by reference to Pigouvian discrepancies between social and private costs or benefits (but not by Pigou's concern about relations between the national dividend and national welfare, which is more often regarded as an antiquity). Others concern comparison of the socioeconomic costs and benefits of alternative versus existing public interventions. Though this fourth set of problems entails some digression, it is worth brief illustration. We consider it first.

Urban economists and sociologists and city planners have in fact devoted considerable attention to many of the social costs of uncontrolled urban growth, of badly conceived zoning and land use legislation, of inadequate highway planning and cumulative congestion. Nevertheless, antiquated conceptions of property rights continue unchallenged while we multiply slums and city core blight. All this is common knowledge and a few creative men have been attacking physical planning problems at their roots. But how far has such analysis gone where there was no philanthropic rich man's money to revolutionize things? What is being done to assess effects of subsidizing transportation of suburbanites, one to a car, while public facilities deteriorate and the flight from the central city continues? We are controlled by the automobile rather than using it as our servant. Add to the suburban trek and its cost spirals in highway maintenance and smog the atrophy of locally identified leadership resources that arise from corporation policies of shifting executives from place to place and the difficulties of organizing urban communities for people become almost insurmountable.

Among the many deficiencies that stem from inadequate attention to discrepancies between private and social costs or benefits are innumerable instances in which deference is to private interests that merely neutralize each other; much, though by no means all, advertising is of this nature--and billboard advertising is an example. The extent to which the returns offset each other is not counted, nor is any account taken of the negative effects on the esthetics of environment. Even more dramatic is the destruction wrought by anti-social legislation "protecting" property rights in minerals. Also, arguments purporting to show that one or another public investment would yield a low return rarely take cumulative effects into account. For example, highway cost-benefit analyses ignore the effects of improving favored routes upon the areas that are not so served. Whether the analysis is essentially Pigouvian or compares public investment alternatives, it is all too easy to disregard the ways in which the history made today conditions that of the future.

The first three of our challenges, and especially the second and third, are much more directly reflections of the shackles in which the economist usually binds himself, and so, conservative that he is, insures his purity and "objectivity." The crux of the matter is in the way in which the economist's unwillingness to "impose his taste on others" is associated with his conceptions of society and human behavior. This sort of self-restraint has its advantages, and very important ones. Among others, on a number of fronts it brings a wider range of variables within the discipline imposed by programming models; in accepting the constraints, able economist-technicians are also pushing against them. But there are fronts that remain closed to all but the most innovative, or the least disciplined. The economist may study income elasticities of demand, to be sure, but only in distant places will he consider what makes and changes tastes. He may go so far, with respect to interpersonal comparisons of utility, as to assume that the marginal value of money is less to the rich than to the poor man, but distribution processes are seen as income distribution only--not diffusion of knowledge and tastes. Even in the recent rebirth of economic interest in education as an investment in human resource development there is a curious paradox in treatment of knowledge for decision-making, and an economist will usually stop with "there are also consumption values." The few studies of the economics of information come mainly out of enterprise economics. And by inheritance economists tend to view all human behavior in terms of self-interest rather narrowly conceived. Above all, even the development economist has become far too scientific to get caught in sharing Adam Smith's priority for the betterment of man, with or without Benthamism.

However, once we set aside the adolescent tautological quibble that all human behavior is "selfish," in that what men do is by definition what they find or believe they find satisfaction in doing, we are freed to regard altruistic behavior and vicarious returns as relevant aspects of decision making. These concepts, though overlapping, are not the same and they differ in their locational applications. Tastes for altruism, which may be seen partially as desires to salve one's conscience, have recently received economic recognition in discussions (by T. W. Schultz and Smolensky)[11] of the changing poverty line. The secular increase in that line with rising national per capita income becomes the income-elasticity of demand for the alleviation of poverty. But this is poverty in the abstract, with no specific location in space; also, only by an extension into social psychology will it justify special assistance to particular areas or communities as wholes. In fact it would dictate nothing more than a raising of the minimum income criterion and a redistribution of dollars to individuals to meet that criterion were it not for some possible reservations about how such a policy may affect incentives and morale. The fact that as a society we do not vote to do it in this cheapest way may be an indication, incidentally, that we are in fact viewing "poverty" as something much more complex than low income--and much closer to ignorance and the chains of underprivilege. The atomistic biases of economic thought preclude analytical consideration of the poverty of a total community environment as the molder of the poor of the future. This atomistic approach to the economics of altrusim may be essential as a corrective to false categorizations (as in farm parity programs), but its disregard of sociological insights distorts its policy applications and lessens its effectiveness in those (many) cases to which it should be applied.

---

[11] T. W. Schultz, "Investing in Poor People: An Economist's View," Paper 64:07 in the Investment in Human Capital Series, Chicago, 1964 (mimeo), and Eugene Smolensky, The Past and Present Poor, University of Chicago, 1964 (mimeo).

Vicarious returns as we define them would include satisfactions of "economic altruism," but are not confined to them. A man may experience an altruistic-vicarious satisfaction in knowing that through his contributions mountain children of Kentucky are receiving better food or better schooling even when or if this would not redound to his benefit in any other way. But he may also be ready to pay for the experienced vicarious satisfaction that would come to him from knowing that the wild life of East Africa is being protected from extinction--or that investment in Appalachian reforestation, though not "economic" by ordinary accounting, insures recreational opportunities to the overcrowded populations of our cities a generation or more from now. Vicarious satisfactions such as these are very closely related to the "benefact criterion" as applied to regional and community development programs (in Bowman and Haynes)[12] from which we quote:

> The productivity criterion involved looking at a program as an investment that should ultimately yield outputs unspecified in their final form but normally (even though not universally) reflected in market transactions. Benefact criteria involve either specification of particular goods as ends in themselves or as means to broader social ends not realized by market processes or expressed in market transactions. Logically these two criteria overlap as soon as the market test aspect (present or future) of the productivity criterion is relaxed. However, in practice the two approaches are likely to put their emphasis on policies of quite different kinds. Even when interpreted in a developmental context, the productivity criterion stresses conformity to given, individually expressed preferences. The "benefact"

---

[12] Mary Jean Bowman and W. Warren Haynes, *Resources and People in East Kentucky*, Baltimore, Johns Hopkins Press, 1963, pages 264-65, 265-66.

> approach can inject into the weighing of policy decisions questions as to what kind of a society and a community we want to build for the future. Benefact criteria lack the established respectability of the productivity approach for the very good reason that there is no general rule by which, problems of measurement aside, a particular policy can be tested. At their lowest common denominator, "benefact" ends can become merely the expression of the tastes of their proponents. But if this means that they are peculiarly subject to abuse and muddleheadedness, it is equally true that they can provide the chief creative wedges in social as distinct from a more narrowly defined "economic" progress . . .
>
> Self-help activities, and borrowing to finance them, are not in question; whether it is a public decision or an activity of private local volunteer groups, both the choice and the responsibility are local ones.
>
> What remains then is the question whether programs justified only on a benefact basis warrant subsidy from outside sources. Evidently those doing the subsidizing must receive some sort of "return" in satisfactions not normally encompassed by the productivity criterion. The focus becomes essentially cultural, and the aid is justified, if at all, as a means of diffusing and "raising" cultural values. Two selection criteria are appropriate in determining who should receive special treatment of this kind: the extent of the local improvement that can be accomplished relative to its cost, and the extent to which the values realized at some "pilot" point will diffuse to others who then initiate improvements that they pay for fully themselves. The outsider must be able to point with satisfaction to what has been accomplished, to an American community of which the nation can be proud--and to others who are following its example. It is as a summarization of such satisfactions of mingled beneficience and pride that the phrase "benefact criteria" was coined . . .

Many people, especially economists, will be highly critical of a "benefact" analysis. Even if they admit its relevance in exceptional cases, they will point with justification to inevitable abuses and serious malallocations and wastage of resources that such abuse will entail. However, if we move back across the uncertain zone that separates the benefact from social productivity criteria to the latter, we can call readily upon the joint support of traditional economics and sociology.

The overtly stated arguments, at least, are about objective measurability. We suggest that this defeatist bias with its pseudo-scientificity should be corrected, that social accounting and development analysis be more nearly societal.

THE EFFECTS OF PREVAILING VALUES AND BELIEFS ON THE PERPETUATION OF POVERTY IN RURAL AREAS

Thomas R. Ford
University of Kentucky

The topic of the effects of prevailing values and beliefs on the perpetuation of poverty in rural areas, I must state at the outset of this paper, is not one that I can treat with any great authority; and if there is any justification at all for my having agreed to discuss the subject, it was the foreknowledge that no one else really knows a great deal about it either. Had I been given the choice in the selection of the title, I would probably have changed it to "The Effects of the Perpetuation of Poverty on Prevailing Values and Beliefs," with which I would feel slightly more comfortable. In any case, we must keep in mind that we are dealing with a complex set of reciprocal relationships, and that many of the values and beliefs which we assume exert a deterrent effect upon measures designed to alleviate poverty have developed as a cultural response to the conditions of life which we are now seeking to change in many areas.

Implicit in the question of the effects of values and beliefs on the perpetuation of poverty is a series of related questions: What are these values and beliefs? How do they serve to perpetuate poverty? And what can be done to mitigate their influence? It is not possible in a short paper to answer these questions in any comprehensive manner, nor shall I attempt to do so. Instead, I would like to present an analytic framework, or at least part of one, in which answers to these questions can be formulated, and illustrate the application of this framework with a few examples.

Since we are dealing here with some rather abstract concepts, let me begin by providing a few working definitions and several assumptions which underlie what I will have to say about values and beliefs. In referring to values, I mean the basic cultural criteria that influence effective responses to experience situations and, as a consequence, guide behavioral decisions when they are required. They are, in short, the standards accepted by a group for determining what is good or bad, desirable or undesirable. Beliefs, as I am using the concept, refer to cognitive elements which define for a social group what phenomena exist and the relationships between these perceived phenomena. Abstractly, beliefs can be treated separately from the evaluative responses to the phenomena, but in any real situation the separation of values and beliefs is probably impossible, for not only is there a tendency to evaluate what is perceived, where relevant values exist, but also the process of evaluation influences what we perceive, as social phychologists have often demonstrated.

Beliefs and values, being cultural, are by definition learned traits which are transmitted to each new generation through the process of socialization. In the course of time, the set of values and beliefs possessed by a society changes as some are retained, others discarded, and new ones introduced through cultural diffusion or invention. There is no clear agreement among anthropologists and sociologists as to how the selection of which traits will be accepted and which discarded is determined, but one of my assumptions is that functional considerations are of major importance in this determination. The concept of functionalism is a much debated one which cannot be dealt with adequately here, so I must simply posit that values and beliefs tend to persist so long as they prove useful to a society as a group or its members as individuals and grant that they may continue beyond their period of utility through sheer cultural inertia. I do not believe, however, that inertial residues constitute a major part of any value and belief system.

A second assumption, which is related to the assumption of functionalism, is that the values and beliefs of any organized society are to a considerable extent logically integrated. This is not to say, of course, that they are logically self-consistent in all respects, but rather that they are related to the world of experience in such a way as to provide an orderly account and explanation of common phenomena and to offer behavioral guides that are compatible with the perceived nature of the phenomena. I am suggesting, then, that there is a logical pattern to most social behavior and its underlying values and beliefs within a given society even though its members may not themselves comprehend the logical rationale.

The utility of these two assumptions becomes apparent when we seek to explain the patterns of values, beliefs, and behavior common to rural people who are living close to the margin of bare subsistence, in such diversified parts of the world as Asia, Africa, Latin America, or our own Appalachian region. Despite the tremendous cultural differences that exist between such groups, one cannot help being impressed by striking similarities in the value and belief systems and related behavioral patterns of peoples who have had no direct cultural contact, at least in recent generations. If we can eliminate cultural diffusion as the reason for these observed similarities, the most plausible explanation is that the same cultural solutions to common situational problems have been independently developed. This is not so improbable if one considers that the biological and social needs of human groups are essentially the same, that certain basic problems and experiences are common to most societies, and that the range of practical means of solving these problems and coping with these experiences with limited resources is not unlimited and may, indeed, be quite restricted. Finally, if we are willing to accept the theory of functional selectivity in the transmission of culture, it may be offered that these cultural similarities of diverse groups of agrarian peoples probably represent the survival of those culture traits that have proved universally satisfactory solutions to common problems. In the case of value and belief systems, this would mean that certain widely prevalent conceptions of the world and prescriptions for dealing with it adequately meet the social and psychological needs of a great many people in different societies. One of the basic problems we face in trying to eliminate poverty is that many of the common values and beliefs which allow people to make a satisfactory adjustment to the conditions of poverty simultaneously impede the taking of actions necessary to eliminate those conditions.

Adequate support of the thesis that the common circumstances and consequences of poverty lead to the adoption of common value and beliefs in different societies would require a comparative analysis that is clearly beyond the limitations of this paper. I should like, therefore, to take a slightly different approach and present several sets of human existence problems which are common to low income rural peoples together with some illustrative evidence of common value-belief solutions to these problems. For my illustrations, I shall draw primarily on my own knowledge of the low income people of Appalachia and some of the anthropological data collected by Oscar Lewis in his study of the Mexican village of Azteca.[1] The choice of the latter was purely a matter of expediency in that I happened to have his book Pedro Martinez at hand when I undertook this paper, but many other peasant groups could have been used for the same purpose. I would submit that the common valued belief patterns found among Appalachian highlanders and the mestizo villagers in Mexico do not stem from any recent culture-sharing, although it is to be recognized that both have been influenced by certain features of the broader European cultural heritage.

The basic problem faced by both rural Appalachian society and Mexican peasant society--and, indeed, by peasant peoples all over the world--is that of maintaining their existence in a chronically precarious situation. There are other problems which they share with other men, three of which are of particular concern here because the sets of values and beliefs organized around these problems are strongly influenced by the fundamental problem of maintaining an existence. The first of these problems is concerned with the relation of man to his environment; the second with the relation of man to his fellowman; and the third, the relation of man to himself.

---

[1] Oscar Lewis, Pedro Martinez - A Mexican Peasant and His Family. New York: Random House, 1964.

The first problem of man-environment relations corresponds closely to Florence Kluckhohn's concept of man-nature orientation, which she sees as one of the crucial problems to all human groups.[2] At one level, this is a technological problem but at a different level it is a philosophical problem; what is man's relation to the world in which he lives? The two levels are not unrelated, for the degree to which man can successfully exploit his environment by means of his technology influences his perceived relationship to it. In general, we can posit that the less control the members of a given society are able to exercise over their environment, the more likely they are to define their relation to environmental forces as one of subjugation, while the more control they exercise, the more likely they are to define their relation as one of dominance. It is also common among those who see themselves as subjugated to the forces of environment to attribute the exercise of these forces to supernatural will, and their concept of this supernatural source is shaped to a considerable degree by the nature of their past experiences. Those who have had generally harsh experiences hold a different concept from those who have not. This was clearly evident in the concepts of God held by Appalachian highlanders of different economic levels as ascertained by an attitude survey in 1958. Those at the lowest levels most generally conceived of God in Old Testament terms--harsh, unbending, and punitive in his treatment of those who broke his Divine law--while the upper economic levels subscribed most often to the loving and temperate God of the New Testament.[3] The people of Azteca, as described by Lewis, hold views of the supernatural that are not dissimilar from those of the Appalachian poor: "Their world was filled with hostile forces and punishing figures which had to be propitiated if their good will and protection were to be secured. The ancient village God withheld rain if he were neglected; los aires, the spirits who lived in the water, sent illness to those who offended them . . . Catholic figures, too, were seen as threatening. God was a punishing figure rather than one of love, and most misfortunes were ascribed to him."[4]

---

[2] Florence R. Kluckhohn and Fred L. Strodtbeck. Variation in Value Orientations. Evanston, Ill. - Elmsford, N. Y.: Row Peterson and Company, p. 13.

[3] Unpublished survey data from files of the Southern Appalachian Survey, Southern Appalachian Studies, Inc., Berea College, Kentucky.

[4] Lewis, Pedro Martinez, p. 492.

The matter of whether the supernatural is viewed as punitive or loving holds less important implications for the perpetuation of poverty, however, than the basic concept of man's subjugation to natural or supernatural forces to the extent of being unable to control his own earthly destiny. Although there is not complete consistency between fatalistic beliefs and actual behavior, it is a logical supposition that the existence of such beliefs acts as a deterrent to active efforts to change one's situation.

In examining the activity patterns of rural people living at a near subsistence level, one typically finds what Florence Kluckhohn has termed the "Being" orientation, in which behavior tends to be spontaneous and directed toward the realization of immediate needs or interests.[5] This orientation stands in contrast to the "Doing" orientation pattern of middle-class American society in which behavior tends to be planned and directed toward the realization of objective goals. This latter mode of behavior is, of course, future-oriented, while "Being" activity, as the name implies, is oriented to the present. In part the present-orientation of low income peoples is explained by their necessary concern with meeting the constantly immediate threats to their existence, with just "keeping their heads above water." But even on occasions of respite, they are not likely to plan activities for achieving goals, nor would such plans be compatible with the idea that their future is controlled by forces outside themselves.

The influence of this orientation on the behavior of low income Appalachian highlanders has been described in a recent and perceptive analysis by the Reverend Jack Weller, a Presbyterian minister who has worked for many years in the region, and I would like to quote several of his pertinent observations regarding the mountaineer:

> "He is an impulsive spender, often wasting money that he could well use on the necessities for his family, perhaps buying a very expensive TV set or refrigerator far beyond his needs or ability to pay for, just to satisfy his whim of the moment, his need to act. He saves little for a rainy day, or for future education for his children, or for projected goals in the future . . . He does not wish to commit himself ahead to a routine meeting because something of an action nature may come up at the last minute that he would rather participate in--a most frustrating trait to the calendar-minded middle-class worker in the area."[6]

---

[5] Kluckhohn and Strodtbeck, Variations in Value Orientations, p. 16.

[6] Jack Weller, unpublished manuscript.

And in Azteca, Lewis notes, "There was a relative lack of concern for the future, and no 'saving for a rainy day.' Only a minority who recognized education as an important source of security saved to give a son or daughter advanced schooling . . . The rest of the villagers exercised a general thrift, but they spent when they had the money and pulled in their belts when they didn't."[7]

These patterns of behavior are, of course, familiar to all who have worked with such people, and I point to them not with any sense of revelation but rather to suggest that they are not illogical given the basic set of values and beliefs that relate to them. Yet there are still many program planners who, operating from a different set of value-belief assumptions, are unable to comprehend the apathetic responses on the part of people of this segment of society to participate in activities which have been planned for their benefit.

A second human problem area around which all cultures develop value and belief sets is concerned with social relations. This is clearly too broad an area to be covered here, so I should like to concentrate rather specifically on the set of values and beliefs relating to the family and some of the implications that these hold for the operation of formal organizations. There is certainly no need to document the extensiveness or dominance of familistic systems in agrarian societies throughout the world, and the fact that the family farm continues as the predominant unit of agricultural production even in our industrial-commercial economy is evidence of its remarkable persistency. The family structure and the supporting sets of values and beliefs relating to it have remained in force throughout the world because they have proved to be relatively successful devices for dealing with the basic economic, social, and phychological problems that are common to mankind. Yet it is also evident, I believe, the family farm notwithstanding, that the family is not an adquate organizational unit for developing large scale economies or political systems. The value and belief systems which have developed in support of the family, however, often operate as effective deterrents to the organization and functioning of alternative systems. The obstructive effects are to be observed in more ways than can be dealt with here, but I should like to indicate several by way of illustration. In the first place, the essence of familism as a value-belief system is that the obligations of the individual to his family, which is usually defined in terms of the extended kinship group among agrarian peoples, hold priority over obligations to other groups and individuals. In many instances, the degree of priority may approach that of exclusive

---

[7] Lewis, Pedro Martinez, p. 496.

44

obligation, but in any case obligations to non-family organizations are viewed as considerably less binding. James S. Brown, in his studies of low income Appalachian families, has suggested that their lack of participation in formal organizations is in large measure attributable to the low value which such organizations are accorded, relative to the family.[8] We have usually assumed that the reluctance of rural people in this country to participate in formal organizations and group projects stems from values attached to individualism and self-reliance, accentuated by the dispersed pattern of land settlement which hindered the organization of true communities. No doubt these factors have exercised some appreciable influence, but we often find the same traits manifested in societies where the agricultural village has been traditional form of settlement and mutual aid an established pattern of cooperative endeavor. In the agricultural village of Azteca, for example, Lewis observed that ". . . the Aztecan lived as an individualist, withdrawn, self-reliant, reluctant to seek or give economic aid or to borrow or lend. Despite the tradition of collective behavior, there was a general unwillingness to cooperate with others in public or private enterprises."[9]

If cooperation with formal organizations within a community is difficult to secure, cooperation with outside agencies is even more difficult. It is to be recognized that in familistic societies, the family serves among its other functions to confer status upon the individual, and hence family reputation becomes a major criterion by which the risk of entering into transactions with an individual member can be judged. The other members of the family are known and, if necessary, recourse can be made to them for familistic values dictate that they are obligated by the commitments of the individual member. The corporate organization, in contrast, is impersonal, and its obligation to support the commitments of individual representatives is often unknown. Consequently such representatives tend to be viewed with suspicion and distrust, particularly if they have no credentials of trustworthiness other than organizational affiliation. In time they may gain acceptance on the basis of personal qualities, but this acceptance is not necessarily transferable to the organization; and since the personnel of corporate structures are frequently mobile, their stay in a community may not be long enough for them to become accepted.

---

[8] James S. Brown, "The Social Organization of an Isolated Kentucky Mountain Neighborhood," unpublished Ph.D. thesis, Harvary University Graduate School of Arts and Sciences, 1950.

[9] Lewis, Pedro Martinez, p. 493.

It might appear that the problem of securing acceptance of an organization can be solved by using local people as staff members. This approach has serious limitations, though. Frequently the necessary skills for filling the organizational role are not possessed by any members of the local community. But an even more difficult problem is presented by the carrying of familistic values into the formal organizational system, for the local member of the organization is still under priority obligation to his kin and is usually expected to exercise his influence in their behalf. As manifested by common practices of nepotism and favoritism in newly bureaucratized agrarian societies. familistic loyalties do often persist and may well militate against the intended purposes of the organization. In any case, the identification of an organization with one or more families may be sufficient to discourage the association of other families with the organization or its programs.

The influence of familism on the perpetuation of poverty is to be found primarily in the fact that most anti-poverty measures assume or require the operation of formal organizations of one kind or another in which the low income people are expected to participate. In some cases, such as the community action programs of the Economic Opportunities Act, their active involvement is insisted upon as a requisite for program approval. Yet as agencies such as the Cooperative Extension Service which have had long experience in seeking to involve people of lower economic strata in programs fully appreciate, participation is not secured by mere mandate and often not even by intensive efforts directed toward this end.

The final set of values and beliefs which I would like to discuss involves those relating to individual's self-perceptions and means of preserving a sense of self-esteem. Whether or not there exists a universal human need to conceive of oneself as essentially worthy, I do not know but I do know that among even the poorest classes such concepts are to be found and great efforts are put forth to retain these self-images. We are certainly familiar with the deep sense of pride of the mountain people of Appalachia, and their quickness to take offense at any slight, whether real or fancied. Indeed, their very sensitivity is probably indicative of the insecurities which they feel in this regard. And the peasants of Azteca possess a sense of dignidad, and undoubtedly subscribe to the common Latin American belief that, as John Gillin has phrased it, "each person has a certain endowment of dignity, honor, and valor which merits respect from others and which he must safeguard at all cost, even death."[10] Thus, Pedro Martinez, the protagonist of Lewis' book which I have cited, concludes the chronicle of his hard and bitter life with the following: "I can no longer think of trying to improve myself. . . I do just as much as I can, and that is all. But, of course, I will always go on being upright. An old man has no energy for other things."[11]

---

[10] John P. Gillin, "Some Signposts for Policy," in Social Change in Latin America Today, New York: Vintage Books, 1960, p. 30.

It is not easy to sustain such an image in a world of chronic privation and frequent disaster, and it is doubly difficult in a society of affluence where poverty and ignorance are generally viewed as marks of opprobrium. Yet value and belief systems do make possible the retention of this sense of worthiness under these difficult circumstances, and by so doing tend to perpetuate the circumstances themselves. Familistic beliefs and values serve this end by conferring certain rights upon the individual simply because he is a member of the kinship system. Whatever his deficiencies or misfortunes, the member of the family system is still entitled to the recognition and even respect inherent in his ascribed status. This is in contrast to the formal organizations in society in which status must not only be achieved but constantly validated through successful role performance. Fatalism, which was earlier discussed in connection with the man-environment relationship, also serves as a means for preserving self-esteem. For however sorry his lot in life, the fatalist can still take comfort in the belief that he is not blameworthy and may even take pride in his ability to withstand the bludgeonings of chance.

Consistent with a philosophy of fatalism, though not necessarily stemming from it, is one of the most common means of maintaining a self-image of worthiness--the simple avoidance of responsibility. It is difficult for the middle-classes to appreciate the operation of this mechanism, partly because they deny or disregard any merits which they have not themselves bestowed but primarily because their perceptions are oriented by a different set of values and beliefs deriving from and supported by a diverse set of conditioning experiences. The middle-class belief that success attends striving and hard work is not mythical, although the efficacy of Puritanical virtues may be considerably exaggerated--since we do not keep very accurate books on the proportion of winners among all who make the effort. We may assume, though, that the ratio of winners to losers is high enough to reenforce the belief. But in the experience world of the very poor, the probabilities of success in almost any major achievement endeavor are relatively low regardless of the effort put forth. To the middle class, the fact that the success chances of the poor are lower may appear irrelevant, for the members of this group are seen as having everything to gain and nothing to lose from seeking to improve their situation. The loss of self-esteem that inevitably attends failure, however, represents a good deal to those who have little else but pride. For many, the stakes are too high and the odds too poor in this middle-class game, whether it is called the pursuit of success, self-betterment, achievement or community development. There is only one sure way not to lose, and that is not to play.

---

[11] Lewis, Pedro Martinez, p. 484.

The three sets of values and beliefs organized around relations of man to his environment, to his fellowman, and to himself have as a common function the provision of security. But, as I have tried to suggest, many of these values and beliefs that function most effectively in this regard for those whose life conditions are inherently insecure achieve the end of providing security through making these conditions acceptable. It is, indeed, the effectiveness of these cultural devices in making tolerable the intolerable that makes it so difficult to introduce changes that will eliminate the poverty conditions to which a satisfactory adjustment has been made. The introduction of change is made even more difficult by the fact that changes inevitably create insecurities and thus call into operation those value and belief mechanisms that have traditionally served to allay anxiety and preserve the status quo.

I do not wish to imply that traditional value and belief systems cannot be changed, for that is demonstrably false. I would suggest, however, that in order to develop successful strategies which do bring about changes in the conditions of poverty, we need to consider more carefully the logic of the value and belief systems that have been developed around and in response to these conditions. There are, I believe, three basic strategic approaches to changing values and beliefs. One is to change the conditions that have given rise to a particular value and belief set. We may, for example, find that guaranteed economic security is a stimulus to social change among the poor rather than a deterrent, as middle-class conventional wisdom now holds. We have assumed that the values of achievement, progress, hard work, and social responsibility are the causes of economic advancement, yet it is not totally illogical to question whether they have not also been the effects of economic security.

A second basic strategy is based on the knowledge that the relationship between behavior and value-belief systems is one of reciprocal influence, and calls for an imposed change in behavior as a means of changing the values and beliefs. Although this is theoretically feasible, it is generally not compatible with our democratic principles except to the extent that individuals can be induced to change behavior voluntarily.

The third strategic approach involves a frontal attack on existing values and beliefs through resocialization processes. This is ordinarily what is done through our programs of education, but their effectiveness is nearly always lessened by the simultaneous and conflicting socialization of the family and community. Often the school cannot really demonstrate that the values and beliefs which it teaches do meet the problems of the lower economic groups, and as a consequence it loses out in the competitive socialization process. Again, I would return to one of my initial assumptions that value and belief systems persist because they are functional, and new systems are not likely to be accepted until their functional superiority can be clearly demonstrated.

Finally, I should like to make explicit one point which has been implicit in much of what I have said. If we are to appreciate fully the effects of values and beliefs on the perpetuation of poverty, we cannot restrict our consideration to those who are living in poverty. For while their values and beliefs do in many instances retard the taking of ameliorative actions, the basic decisions as to what anti-poverty measures shall be taken and how they will be implemented are going to be made by the members of the dominant culture. In the final analysis, we may find that the values and beliefs which tend most to perpetuate poverty are not so much those of the poor themselves as those of the dominant social groups which relate to the causes of poverty and the appropriate means of eliminating those causes.

EDUCATION AND ECONOMIC OPPORTUNITIES IN DEPRESSED AREAS: IMPLICATIONS FOR RESEARCH

Theodore W. Schultz
University of Chicago

In his letter to me Professor Maddox stated that the major aims of these meetings are: "(1) to take stock of existing knowledge with respect to problems of chronically depressed areas; (2) to point out major gaps in this body of knowledge; and (3) to suggest types of research needed . . . to cope with the problems of poverty in those rural areas that have a long history of low per capita income." These aims provide us with an excellent agenda; I hope our meetings will not wander too far afield.

To undertake the task assigned to me, I find it necessary to speculate about the analytical game we are entering upon and to search for concepts that may prove useful. The game here is problem solving, not by naive appeals to folklore and doctrines but by winnowing for new knowledge by analysis. The test of such knowledge is in its relevance and usefulness in guiding private decisions and public endeavors to remove the causes of depressed areas, to raise per capita income, and to minimize poverty. At first blush these endeavors seem to be one and the same, yoked together like a Russian troika, but to see them thus would be a superficial view. The Maddox mandate confronts us with the problems called "depressed areas," "low per capita income," and "poverty." But they are not synonymous. To clarify, I shall comment briefly on each.

Depressed area. A depressed area is a part of an economy that is not functioning at its economic optimum; it is in this sense in disequilibrium, usually with respect to other areas of the economy. The suboptimum performance of a depressed area may be a consequence of one or more economic disequilibria. Adding "chronic" tells us it has been depressed for a long time. But a depressed area is not necessarily poor; it could possess excellent land, modern industries and many workers with high skills and yet have become depressed. An extension of this logic also implies that a rich area even though it were depressed could still produce a high level of per capita income and one might find little or no poverty in the area. I propose to treat a depressed area as one that is performing below its economic optimum.

Low per capita income. Whether low or high, per capita income is a tricky concept. The usual estimates of per capita income conceal ever so much more than they reveal. Obviously the size distribution of personal income matters. In most of the larger poor areas in the United States it is probably more unequal than it is in the country at large. It is more unequal in agriculture than in the rest of the economy. The mix of transitory and permanent income components is important. We must also reckon with demographic factors, the personal distribution of wealth and the connection between income and consumption. Unfortunately there is no useful ready-made definition of a low per capita income; nor is there a theoretical scaffold that integrates functional and personal income. Thus we must work with ad hoc notions even though they are a poor second best. But let us be on our guard in doing so.

It is of course highly plausible that the per capita income in depressed areas would rise if such an area were to attain its economic optimum. But for reasons already stated an area could be poor although it were not depressed. Suppose the available resources were used efficiently both within the area and between it and other areas and suppose they are comprised of poor land, backward industries and many workers with low skills--the presumption is that per capita income would be low. There is also the income-wealth paradox; for example, in U. S. agriculture income per family is relatively low but the net worth of the assets owned by farm operator families has a mean value that is twice as large as that of nonfarm families, i. e., $44,000 and $21,700, respectively, on December 31, 1962.

Poverty. Strangely enough it is easier to establish a meaningful definition for "poverty" than for "low per capita income." Poverty is a complex social-economic state that characterizes particular families in a society. Living at subsistence measured in food and shelter is not a meaningful definition. Nor can poverty be defined satisfactorily in terms of income alone because some families with relatively little income nevertheless own substantial amounts of wealth. Neither income, wealth nor consumption is a dependable measure. Even when all are used in combination, the resulting measure will not tell us why and the extent to which our society redefines poverty so as to raise the so-called "poverty line" over time. A meaningful concept of poverty is determined in part by our social values and in part by our production possibilities. People generally prefer a society with fewer rather than more families in this state of poverty; and one can straightaway infer the social disutility of poverty. What this means is that our preferences are such that a reduction in poverty enhances our satisfaction. The question then is: At what price can we obtain such additional satisfactions?[1]

---

[1] I follow closely here my paper, "Reflections on Public Approaches to Minimize Poverty," to be presented May 4, 1965, at Conference on Poverty Amidst Affluence, West Virginia University, Morgantown.

But let me return to an important implication of our preference in this connection to explain why we raise the poverty line as our personal income increases. As I have shown elsewhere,[2] these preferences reveal a type of behavior to which the concept of "consumer" demand can be applied. By applying it, we find that the poverty line is a function of the rise in per family income which can be treated as an income elasticity. Since 1935, for example, family income in the United States has doubled and we have raised the poverty line about 55 percent which implies an income elasticity between 0.5 and 0.6. Although it is gradually becoming less elastic as per capita income rises, it is sufficiently stable to make useful and dependable projections; according to this reasoning, then, as family income rises, say by another one-fifth, our response will be to raise the poverty line by about one-tenth.

The spatial areas of concern to us meeting here are below optimum by my definition, and they are also poor in resources but it is essential to distinguish between these two economic attributes. It is wishful thinking to believe that an optimum use of the existing resources by itself would come even close to producing as much income per working adult as is produced in the rest of the country. The key here consists of additional resources acquired over time by investment and the additional income that can be obtained by this means.

Educational Activities

I now turn to my assignment and to my first question. How and how much can education contribute to solving the disequilibria that make this a depressed area? One approach to this question would be to look for alternate uses of existing resources with factor and product prices as they are and within the present institutional framework. My guess is that this approach would not reveal many unexploited marginal gains. A second approach would be to determine the suboptimal performance of the economy of the area associated with minimum wages, high farm price supports, the system of taxation and allocation of public revenue, and with the recent low rate of economic growth and high rate of unemployment of the U. S. economy generally. Here, so I would suppose, our investigations would discover that there are substantial gains to be had.

---

[2] "Investing in Poor People: An Economist's View," presented at December 1964 meetings of the American Economic Association, Chicago, Forthcoming, May 1965, Papers and Proceedings issue of the American Economic Review.

A third approach is to try to determine what an optimum allocation of resources would be, say two or more decades from now, if investment in human beings, predominantly schooling, were approximately the same in all parts of the country. Suppose that aggregate demand makes for full employment, that the growth in demand for products and services continues as in the recent past, that the recent growth in the supply of new inputs also continues, that the public investments and associated programs reduce substantially the private costs of leaving an area and entering another, and that discrimination against Negroes declines. Under these favorable suppositions, how would farm people and Negroes throughout the depressed areas of the South respond to investment in human beings following my third approach? The implication of this approach will come as a shock. To protect myself, I could plead academic innocence! But instead consider the following hypothesis:

Two major classes of working adults, farmers and Negroes, who reside here will decline markedly relative to the number residing in the rest of the United States.

The hypothesis here advanced rests on the following logic: (1) Skills acquired through schooling increase the potential economic productivity of working adults. (2) Schooling also increases the capabilities of people to migrate. (3) The regional differences in the demands for high skills resulting from economic growth favor other regions comparatively. (4) On-the-job training to supplement the skills from more and better schooling are more readily available to those who migrate to other regions. (5) In agriculture the comparative advantage shifts adverse to this region. (6) In the preferences of Negroes occupations in the South are inferior occupations in the sense that there is for them a disutility in working in the South. (7) As a consequence of these conditions, the total migration effect upon the number of farmers and Negroes of the region will exceed the total productivity effect upon those who remain.

A study by Micha Gisser,[3] while at Chicago, develops an approach to estimate the "two effects of additional schooling on the effective supply of human agents committed to farming, i.e., (1) the out-migration effect reducing the supply and (2) the capability effect increasing the supply." His estimates for the United States show that both effects are substantial but that the out-migration effect is appreciably larger than the capability effect. Is it plausible that agricultural production in this area will increase at a higher rate than elsewhere in the economy and that the demand for high skills in farming derived from such an expansion will shift the balance here? I believe this outcome to be wholly implausible; on the contrary, as in the recent past, the net effects will in all probability be the other way around. Moreover, I would be surprised if the overall functioning of the labor market for Negroes as their skills rise would not behave in an analogous manner. What this approach implies, stated baldly, is that more and better schooling will be instrumental in reducing the labor force represented by farmers and Negroes in this area. Moreover, the disequilibrium implied here is probably of a magnitude that large reductions would occur as a consequence.

---

[3] Micha Gisser, "Some Implications of Schooling and the Farm Problem," Paper 6305, July 18, 1963, Office of Ag. Econ. Res., University of Chicago. Forthcoming in Econometrica.

But there is more to this story. I would expect the earnings of farmers and Negroes who remain to rise relative to the earnings of comparable working adults in the rest of the economy. Three strong reasons support this expectation: (1) The ratio of complementary resources per worker would increase in this area (hopefully we will not place land that can produce an economic rent into a deep freeze); (2) the additional skills per worker would represent value added in productive services; and (3) the out-migration here postulated would tend to reduce the interregional gap in the value of comparable skills.

Paying for Public Education

Who then should pay the educational bill under these circumstances? The bill here, for all practical purposes, is of two parts, i.e., private and public. How much of the total bill is placed on each of the two accounts depends on policy. On what basis should this policy be determined? I shall restrict my comments to schooling up through the twelfth grade, thus covering only elementary and high school education. Let me assume that this schooling is provided on public account in the sense that there are no charges for tuition and transport. There will of course be some private costs, mainly earnings foregone while attending high school. My approach to the public bill entails two steps: (1) an allocation of this bill among public bodies on the basis of social benefits that accrue to each body; and (2) an additional allocation to reduce future inequalities in the earnings of working adults.

Social benefits criterion. These benefits accrue to people other than to the person who has acquired the schooling, partly as consumer benefits, e.g., from the satisfactions of having such neighbors and partly from the complementary productive effects that accrue to co-workers and to employers. But these benefits are hard to assess. Less difficult here is to identify the additional earnings attributed to schooling and then to estimate the additional income taxes, sales taxes and excise taxes paid as a consequence of the additional earnings. The place of residence of workers is obviously a critical factor in determining the public bodies that acquire these additional tax payments. Suppose, as I have argued, that more and better schooling in this area will result in many people, mostly young people who are ready to become working adults, moving and taking up residence in other areas. Federal taxation is our primary means of capturing some of the earnings attributed to the additional schooling; the federal government thus collects and in turn it should pay part of the bill. It also follows inescapably that the federal government cannot be indifferent on how such funds for education are used. Children who are potential future migrants, whether white or Negro, whether from farms or towns, must be assured more and better public schooling.

Equality criterion. This criterion rests on our social values, on the same values on which our progressive taxation rests. The difference is that in one we apply it in raising public revenue and in the other in allocating public funds. "Free" public schooling is undoubtedly a potent institution for reducing the inequality in the size distribution of personal income. Moreover, it has the attributes of an investment and it therefore has the advantage for it is not likely to give rise to allocative efficiencies of the type that are associated with some aspects of progressive taxation. Since it is a plain fact that this area is burdened with relatively low incomes and much poverty, the equality criterion argues for much more of the educational bill being paid by the federal government than is the case presently.

Increasing the National Asset Value Represented by Schooling

I propose now to focus on schooling as capital formation. I shall leave aside the cultural values of schooling. In strictly economic terms I shall not reckon any of the consumer satisfactions that are associated with schooling, not because they are unimportant but because the present state of our knowledge is limited to earnings that are linked to schooling.

Our economy is presently of the type that increases the demands for high skills relative to that for low skills. This type of economic growth has produced strong incentives to acquire the high skills, and there has been an impressive response to these incentives. The critical criterion is the rate of return to schooling when we treat schooling as an investment in skills.

But we know all too well that the market for the skills required in agriculture has long been depressed; yet even in farming high skills measured by schooling are more valuable than low skills. The relative differences in value appear to be about the same as in the rest of the economy, although the absolute level is much depressed. We also know that the labor force devoted to farming has declined by one-half since 1940, yet the market for these skills is still in serious disequilibrium. Older members of this labor force have no real alternative but to settle for the depressed, salvage value of the skills they possess. In many farming areas the quality of elementary and secondary schooling has been and continues to be far below par and thus the oncoming generation from these areas is ill prepared to take advantage of the strong market in other parts of the economy for high skills. I have elsewhere[4] devoted a long paper to "Underinvestment in the Quality of Schooling: The Rural Farm Areas," and it should not be necessary to repeat that story here. I must point out, however, that the vast expenditures by the federal government on behalf of agriculture have not been used to raise the level of these skills; on the contrary, they have been used in ways that enhance the income from some classes of property and that worsen the personal distribution of income among farm families. Thus it should not come as a surprise that although farm families are presently a very small fraction of all U. S. families, they account for much of the observed poverty[5] and that many of the families in urban areas who are below the poverty line have recently come from our farms.

The market for the skills of Negroes has also been long depressed and the poverty component here is large. This market has been intertwined with that of agriculture; and both on our farms and in our cities, there has been and continues to be much job discrimination. More important still is the low level of skills of Negroes, which is mainly a consequence of the history of discrimination against Negroes in schooling. Not only have Negroes obtained fewer years of schooling but the schooling has been of very low quality; it was especially so for the older Negroes in the labor force.

---

[4] See *Increasing Understanding of Public Problems and Policies, 1964*. Chicago: Farm Foundation, pp. 12-34.

[5] It should be noted, however, that the precise amount of poverty attributed to farm families is not as large as the widely used statistics appear to show. Wealth holdings are large relative to measured income. My estimate of average net asset position of farmers who are actually farming (3.48 million in 1963) was approximately $35,800 per farmer in 1963 (from my "Our Welfare State and the Welfare of Farm People," *Social Service Review*, June 1964, pp. 125-6). In the "Survey of Financial Characteristics of Consumers," *Federal Reserve Bulletin*, March 1964, Table 2, p. 293, the average net worth of the 2 million farm operators in this sample came to $43,973 on December 31, 1962. My colleague, Margaret Reid, has done yeoman work in directing attention to components of real income of farm operator families that are still not measured.

The South is burdened with a larger supply of low-valued skills than other regions basically for three reasons: (1) It is more dependent upon agriculture than the rest of the United States (it accounted for over 45 percent of all U. S. farms at the time the 1959 census of agriculture was taken); (2) the labor force in the South is more largely Negro than in the North and West and in terms of marketable skills the Negroes in the South are even worse off than the Negroes in other regions; and (3) relatively more of the whites in the labor force in the South have low skills than whites in other regions. In short the South has been lagging seriously in providing people the opportunities to invest in acquiring the high skills for which the demand has been increasing at so rapid a rate, predominantly because of social, political and economic discrimination adverse to poor people.

Implications for Research

I shall close by referring back to Maddox's request that we point out relevant gaps in our knowledge. This paper I trust serves to underscore the following gaps:

1. We should attempt to determine magnitude of the regional redistribution of the labor force that will confront us during the decades ahead. It is plain folly to expect agriculture here or elsewhere in the United States to provide meaningful economic opportunities for more of the labor force a decade or two hence. It is also wishful thinking to expect the low wages of unskilled workers to attract a flood of new modern industries because low wages for such labor services are not cheap inputs. But the most serious ambiguity arises with respect to future economic opportunities for Negroes in the U. S. labor markets. The older Negroes in the labor force will have had not only little schooling but very low quality schooling. Occupations in the South will remain inferior occupations for Negroes, other things approximately equal. Sufficient opportunities simply will not be forthcoming in the South. As in agriculture, the Negro labor force in the South will want to and will have to transfer in substantial parts to other regions. To advance our knowledge on this critical issue, it is not enough to engage in farm management studies, or undertake investigations to expand industries that are labor intensive, or to analyze the imperfections in the existing capital and labor markets. What is required analytically is to determine head-on, letting the chips fall where they may, the prospective increases in the demands for the skills of Negroes and the increases in the supply including improvements in the level of the skills of Negroes.

2. At long last the federal government will begin to pay a part of the elementary and secondary school bill in poor areas. But it is only

a small beginning. We must, so it seems to me, establish the economic basis for determining how large a part of this bill should ultimately be borne by federal funds. The analysis here should seek to identify and estimate the public benefits including tax receipts from more and better schooling and the contributions that such public expenditures for schooling make in equalizing the size distribution of personal income.

3. Using the new knowledge that we have acquired with respect to the returns from schooling, it should now be possible to estimate how much of the difference in earnings per working adult among regions, is attributable to the difference in the amount and quality of schooling. Professor Gary Becker is undertaking such a study. The analytical framework that he has developed for this purpose is full of promise. His preliminary tests using this model indicate estimates that suggest that most of the observed difference in such earnings can be explained by difference in schooling. This analytical approach opens up a large new area for what may become very useful studies.

4. Where there is lack of motivation on the part of Negro pupils, I would advance the following hypothesis: The observed lack of motivation arises predominantly because job opportunities open to Negroes fail to reward them sufficiently to warrant the extra effort and additional costs of attending or making a good record while in school. Let's find out how much of the lack of motivation is a creature of this aspect of our economic system.

5. We still know precious little about the economics of the quality of education. How much of the low quality of elementary and secondary schooling is rooted in a lack of information by parents of the value of such quality components, in an inefficient use of resources by schools, or in parents being too poor to afford better schooling? In the years ahead gains from additional expenditures on schooling will come increasingly from improvements in quality of schooling. It is high time that we determine the costs of and return to the components in schooling that make for quality.

6. Lastly, we are in want of knowledge required to make meaningful choices with respect to public approaches to minimize poverty. In my West Virginia paper, I identify four basic approaches: (1) Raising particular factor and product prices (i.e., minimum wages and high farm price supports), (2) progressive taxation, (3) economic growth and employment, and (4) investment in poor people. The economics of public approaches to poverty can thus be put on our research agenda.

I have interpreted the Maddox mandate broadly. Your taste may be otherwise. I await the pending dialogue with much pleasure.

ENTREPRENEURSHIP AND INNOVATION IN CHRONICALLY DEPRESSED AREAS

Ernst W. Swanson
North Carolina State University

> When man ceases to wander, he will cease to ascend in the scale of being. Physical wandering is still important, but greater still is the power of man's spiritual adventures--adventures of thought, adventures of passionate feeling, adventures of aesthetic experience or . . . the very benefit of wandering is that it is dangerous and needs skills to avert evils.
>
> —— Alfred North Whitehead

The weakness of economics is perhaps the weakness of any science. In content it is at its best fragmentary. This fragmentation may well be illustrated by the slowness with which we have developed the concept of the entrepreneur and of the place of entrepreneurship in the economic expansion of any region.

To be sure, some notion of the entrepreneurial role has been floating around since 1750. The Physiocrats regarded land as the only agent of production and, particularly, its physical nature. They were the first to allude to entrepreneurship but because of their attachment to land, its place in the economic system was by no means clarified. In a world of supposedly self-evident truths, it was difficult for the Physiocrats and their successors, the Classicists, to see any significance in the entrepreneur and his significance for their existence. They did not understand, to paraphrase upon Knight, that there was a function beyond those performed by land, as well as labor, and capital; and that this function had much to do with the rise and growth of the industrial society.

In the 1840's, Mangoldt stated the beginnings of a realistic theory. He was the first of a number of writers who built blocks of a general theory.[1]

---

[1] It should perhaps be observed that Adam Smith and some of his contemporaries sought to evolve a theory of economic development largely through their explanation of capital formation but they never succeeded in stating the relationship of entrepreneurship to capital formation.

Capital and labor (and if you wish, land) were joined together into such effective productive organizations as could never have otherwise been achieved. At the same time, capital and labor found it possible to transfer large portions of their risks to the entrepreneur. Eventually, it became evident that modern society could never have developed had this function not been evolved.

Perhaps his place in the enterprise society, as it has become termed, was so obvious that the writers of earlier time found little necessity for either description or delineation of the function. This is a view taken by those economists who are tolerant of this major omission. Knight is emphatic, however, that had there been any understanding of the entrepreneur as an element beyond the productive factors and which operated to consummate the event of the firm and all that it stands for, there would never have been the naturalistic theories of economics as voiced by Ricardo, Marx, and their numerous followers. For my part I am inclined to go along with Knight, but with certain reservations about the nature of uncertainty.[2]

Knight's penetrating examination of the place of information, its apprehension, and its relationship to decisions regarding change in production and consumption appeared nearly fifty years ago. Since then, there have been relatively few comparable penetrating examinations of the entrepreneurial function. Notable exceptions are those of Schumpeter, Sombart, Hardy, Myrdal, and more recently, Simon, Shackle, and Penrose

During the interval that elapsed since the first writings of Knight, Schumpeter, and Sombart, the ideas set forth especially by Knight have been enlarged upon and even modified. Miss Penrose writes that the evaluations and judgments made by the entrepreneur are ". . . closely related to the organization of information-gathering and consulting facilities within a firm, and it leads into the whole question of the effects of risk and uncertainty on, and of the role of expectations in, the growth of the firm."[3]

---

[2] Cf. Ernst W. Swanson, "An Hiatus in the Risk Theories of Knight and Myrdal," Proceedings of the Nineteenth Annual Conference, Pacific Coast Economic Association, 1940. Shackle's and my views possess a kinship. In his definition of "unbounded uncertainty" I find this difference: He is concerned with "what" and I, with "how."

[3] Edith Tilton Penrose, The Theory of the Growth of the Firm, New York, 1959, p. 23.

Now one would assume that the growth of the firm and of the economy are closely interdependent. Yet, this interdependence has been largely neglected or else cavalierly set aside by contemporary growth theories. So-called "decision theory" is still considerably propaedeutics. Ever since Keynes' General Theory the major interest has been concentrated on the formation of capital, as plant and equipment. Whether we look to Lange, Harrod, Hicks, Domar, and yes, even some of the Russians, volume after volume and article after article investigate in some fashion the relationship of I to GNP or to employment. And possibly, for the reason that the original Keynesian model lends itself to magnificent modifications by the way of derivatives, matrix inversions, and supposedly dynamic variations by the tortuous path of difference equations. The extent of their verification empirically leaves much to be desired.[4] Exceptions here are perhaps Myrdal, Theodore, Schultz, and Aukrust. Myrdal joins together sociological and economic methods. Aukrust finds by econometric means that human investment, largely social overhead, rather than physical investment, explains far more of the variance in national income and its growth. Schultz opens up in his fashion a wholly new vista about the nature of capital, and possibly, of entrepreneurship.[5]

There are such eclectics as Higgins and Lewis who seek to temper the propensity for econometric edifices with explorations into the socio-economic behavior of man and his more than apparent lack of inducement to change the status quo. In this connection, I am partial to Myrdal, Aukrust, Higgins, and Lewis, even though each would perhaps say that their efforts are not related enough to be classed as "kissing cousins."

A Basic Defect of Growth Theory

The cardinal assumptions of classical economics about given ends, given means, and given "laws of nature," served almost majestically to render economics and the role of the entrepreneur in economic change a Disneyland fantasy. The comparative statics of Keynesian theory, with its relative constancies of the marginal propensity to consume and of liquidity preference, has not aided us any more than did classical explanations in getting rid of the given-ends assumption, when all along ends may themselves be problematic. There is consequently an almost monstrous incongruency between assumptions and the consequences of resource creation and allocation. For all too many of our colleagues have been tempted to accept these assumptions and the partial equilibrium conditions under which they were analyzed without little more than transparent equivocation. The place of the entrepreneur in economic development continues to be fragmentarily treated. As a consequence, there is little systemic attack upon the relationship of entrepreneurship to the "underdeveloped region."[6]

---

[4] Cf. Jan Tinbergen and Hendricus C. Bos, Mathematical Models of Economic Growth, New York, 1962.

[5] Theodore W. Schultz, "Investment in Human Capital," American Economic Review, March, 1961.

Surely, under the assumption of the givens, at times almost boldly pressed, the function of the entrepreneur cannot be made a part of a theory of risk-bearing and its implications for the change of a region's *status quo*. Under such assumptions there is hardly need for choice among alternative uses of resources. The decisions made about resource allocations are "empty," devoid of theoretical meaning and, in a given region, a product of congruency of thought and action. To be sure, a choice among ends may on occasion be entailed so that there is a trace of decision making *a la Penrose*. But it will not attain a magnitude as would necessitate the function of an entrepreneur. To recite a passage from Lecky (*History of European Morals*), it appears rather that the members of that society are "Impelled by a species of moral gravitation," and . . . "insensibly to the system which is congruous to (their) disposition."

In stating the ends as given, we are guilty for the purpose intended here, of one kind of scientific error. In turn, this error is compounded into a conception of socioeconomic change so sterile, indeed, that both the professional economist and the layman, misguided as they thus may be, are essentially incapable of entering changing knowledge, science, technology, and values into a theory of economic organization and all that it pertains to economic development. Throughout the Western World, ever since the 1920's, we have become so imbued with this virtually doctrinnaire, theocratic stand that, in fact, we economists are looked upon with suspicion by those segments of mankind that live and hope for an improvement in their lowly state. We ourselves are unable to inaugurate changes in socioeconomic organization as would serve these lowly meaningfully.

On the other hand, if we have choice of ends--and they become problematic--then how can we apply our existing theory to the study of motivation of people, to induce them to act in such ways as would help them to move ahead? Now, we are confronted with change under uncertainty. Because of our lasting adherence towards maximization notions, we have not evolved a way of treating systemically the uncertainty that a stationary economy must face if it is to press forward.

---

[6] A specious term at its best. Myrdal calls it a "value-loaded" term, and he may well be right. Those of us who have in some way participated in the creation of Appalachia find it truly troublesome.

We cling to an inheritance from particular schools of psychology, especially the extremely individualistic: the way of treating data strictly as "stimuli" to our physical system. To paraphrase upon Ruskin, we have dealt with information only as it were the product of "our senses at the moment." We thus still apply our economics much as has done the British empiricists since the day of Hume. We therefore do not comprehend that we need to go beyond our immediate tactile senses so that we may accumulate, code, and store information that is both subjective and objective. This calls for much more than the use simply of tactile senses.

A living economic theory capable of rendering known to us the past, the present, and expected behaviors, and capable of amplifying our data to fit the situation confronting us in the study of economic growth and development is today of first order of importance, contrary to those whose efforts are chiefly to maximize some utility, usually hardly different in meaning that was Bentham's conception. Our concepts need to be viable and our means of communication, to follow George Herbert Mead, should be processed in such a way as would show us how data related to the problem at hand are accumulated, how they are coded (translated into an understandable language), how they are best transmitted and received, and how we and the layman can abstract meaning and solution from them.

The adaptation of any society to change involves such a theoretical framework and procedure, by means of which we would encourage people of an underdeveloped society to change and to effect their comprehension of ends as being problematic, not predetermined. The greatest harm done to economic theory was the failure of both Classicists and Marxists to understand this nature of ends and the role, which ends so constituted, may play in economic change. But their horse-and-buggy empiricism gives us no knowledge of environment or of our setting in which subject and object both play their parts. Experience is not to be accepted solely as singular in origin. Experience is gained through our senses, our nervous system, and our intellect. Knowledge is basically social for we test our hypotheses against existing knowledge and against the experience of others. Ideas are created by the individual but they are screened by society, when accepted to become a part of knowledge and to help discard knowledge no longer useful. The economist's job is in no small part that of measuring the effectiveness of those ideas, where effectiveness is measured by valued outputs.

If we, however, enter as inputs into our theory the assumption of complete freedom as to ends, the "given laws of nature" tend to shrink away into nothingness, for the result of one decision rests upon knowledge of decisions about choices of other individuals. The notion of "perfect knowledge" or "perfect foresight," as a condition of perfect competition, has no place in a changing socioeconomic structure. Were we to work from the opposite point of view, we would soon be pitched by our economic horse (to enter a twist upon Stephen Leacock) into a patch of errant desert cacti.

This process of softening our once rigid assumptions makes it possible for us to bring into our theory the entrepreneurial function. While we do seek for universality in scientific laws, so that we may work under less difficult conditions (were these universalities not present), we dare not fragmatize economic knowledge (or other knowledge) to the degree that we do not understand the minds of decision-makers (whether they exist in relatively stationary or dynamic economies).

By necessity, there is a continuing tendency for man to universalize. This tendency explains the kind of growth models that we have inherited from the far past and to some extent the immediate past (Scrooge is not the only troubled man among us). What is essential is a gradual releasing of the conditions as we are made aware of their presence and nature. Reference is to ends and to values especially. Actually, a universality, as has come into existence, may be useful in explanation of the past. The "law of gravity" has grown into such a universal, when at one time it was but an hypothesis. Indeed, Newton supposedly never considered it a universal.

At this point we may note that classical economics was not far removed from the centuries when the religious universal dominated most of man's decisions. Here I borrow from Mead's Philosophy of the Act. In the classical era ends were assumed as ineluctably given. Since then the reigning universal of religion assigned to man a predetermined future, an immutable destiny of a judgment by forces superior to him and strong enough to hold him in its chains. Classical economic laws were written under assumptions partly carried over from the just price arguments of the Church and only slightly modified under a labor theory of value which had a theocratic-naturalistic ancestry. How could there be a theory of growth other than that already written into the stars! This naturalism with its determinism appears nowadays to be quite common to underdeveloped regions, even in the "Deep South." We Southerners are confronted with more than simply "patriarchal tendencies."

The value of a universality does not derive from rigidity of thought, concept, and assumption, but from adaptability thereof. At this moment, in the life of western man, it would surely not be amiss to suggest that the religious universal has been largely replaced by the economic universal, in one form or other--but still in Marxian and classical form. (Today, we may be on the road to still another universal, quite free of the traditional determinism. But these conjectures must be left to another time and place.)

Above and beyond all this, we need to restate in some degree the function of the entrepreneur. He today appears to wear a number of faces.

The world is a setting for action, but only if we choose to make it so. The Middle Ages and the later insular world of England hardly needed the entrepreneur. It was not apprehended then that the history of economic thought is actually never complete. But, today, it is brought into our consciousness, both by what has preceded and by what we may expect to come. We citizens of this contemporary world--and no less the entrepreneur's--seek to formulate judgments about what has happened and about what may happen, but not under the long-established assumption that all that there is to science is empirical. For we economists along with all other sciences tend to affect the nature and course of the value system which supplies us our guidelines of behavior. Were we therefore to revise our theoretical framework so that we treat this course of values as a process, we may be able to establish a workable measure of determinability without freezing the ends, and hence, an understanding of economic change, for we cannot be rational under complete indeterminacy. By an "open-ended" construction of our theoretical framework, we may particularly succeed in rendering valuable ideas about the nature and course of socioeconomic change itself and its possible effects upon man from time to time.

To achieve this mode of analysis so that we effect cognition akin to that manner which now serves the physical sciences and technology, we must by all means learn what value itself is. That is, we need know how to make efficient decisions. This cognition calls for the creation of another element of our process of analysis and of the process of change itself. We need to comprehend wherein values arise and occur. In all likelihood, we shall find that values reveal significant diversities. We also need to learn how to interpret these diversities and the settings which generate them. Under modern psychology we are individuals who have the potential to create ideas (a potentiality that is both rational and irrational). We do not aim necessarily to affect the methods of physical science, although there are similarities: Consider quantum mechanics with its stochastic measurement of the motion of high velocity particles.

Let us from the very first, therefore, understand that values arise under a multitude of variations of our experiences. Economic values, whatever they are, are colored by the differing ways of life, the sciences and the technologies to the extent they prevail, the social and political views of man, his general knowledge, and so on. Herein we create a matrix that states and contains the nature of our spheres of action and interest. Call it our socioeconomic domain.[7]

As was decades ago debated by the American institutional school of economics, especially by Veblen, Mitchell, and their students, man is a purposiveness animal. For the sake of brevity, it may then be said that the domain in which values arise is largely the creation of man himself. Man renders judgments about what is right or wrong and the implications of such judgments for him himself. In this framework the entrepreneur more than casually plays a significant role. The domain of the divergent socioeconomic interests can be rendered sufficiently objective to decision-making by the analysis of them by the entrepreneur. Indeed, his major activity is the evaluation of that general background of mankind which determines the value setting and which again governs the behavior of those members on account of whom he acts or hopes to act. The entrepreneur more and more in present day life moves toward this purpose, even as the means of communication, computation, and storing of information are improved.

Aristotle used the word "telos," from which, I assume, the word "teleological" is derived. (Perhaps the word "telic" is better than telos.) Entrepreneurship has in itself teleological connotations, whatever Veblen may have observed about the pecuniary motivations of entrepreneurship. But, as Veblen might say, the word needs to be "softened" a bit. By this "objectification" of the entrepreneurial function I do not think that we shall fall into the trap of British empiricism. Rather, we join together the subjective and the objective in our efforts to portray the function.

Now, I do not mean to speak of the entrepreneur strictly as a single individual. In the modern business enterprise the entrepreneurial function is spread about in such a way that several individuals of varying ranks participate in judgments and decisions related to the role. Model building goes on, but now through the offices of entrepreneurship it achieves a reality that the economists cannot expect to effect through their "theory of the firm." That theory is much too asymmetrical to be of significance for decision-making. It actually avoids "the importance of recurrence to the concrete." Much more applicable is the theory of organization of socioeconomic activities and the part that entrepreneurship plays in affecting symmetry of its nature and purpose. Virtually all interests in the world of the firm are to be observed, not the sole purpose of profit maximization.

---

[7] See: (a) W. Rudin, Principles of Mathematical Analysis, New York, 1953. (b) Frank L. Wolf, Elements of Probability and Statistics, New York, 1962. (c) Ernst W. Swanson and Cleon Harrell, Projections of Employment and Population by a Set of Eight Structural Equations, Raleigh, 1961.

Risk, Decision and Economic Growth

I am at loss to understand how writers on the general "subject" define "economic growth" or "economic development." I find that some use "economic growth" in a narrow sense, the growth of income and employment. Others think of "development" as in a broader sense than "growth." It refers to a transformation of the entire socioeconomic system. Perhaps the latter has the greater significance of the two. Yet there would be some who would say that the rise of income and employment implies development. But the automobile industry which in time has had and continues to have great impact upon our economy dates back to the 1880's. It was not until some nearly fifty years later that the full impact could be discerned.

In other words, an underdeveloped region or nation may hardly expect wonders from the introduction of any one industry, no matter how great its potentials may be. An underdeveloped region needs probably to fix its attention upon both the private and public sectors of an economy, so that as an industry or two are introduced a rapid rise of those industries may be affected through changes in the training and education of its labor force, in means of communication and transportation, in health and medical care, and in those areas of life that generate aspirations in mankind. This argument has been raised again and again and there are some who agree with it and others who do not! But one matter must be noted: no underdeveloped nation, if it is to grow in the general socioeconomic sense, can afford to waste its assets in warfare, boondoggling, and related activities. The reasons therefore should be obvious.

From the side of entrepreneurship, weapon systems industries are a definite drag on its development. The contention that entrepreneurship can be learned from such motivations is stretching truth too far. This face of entrepreneurship is the consequence of that theory which sees risk as largely an exogenous element--strictly, an offshoot of classical theory and its forebears. The entrepreneur is regarded as the one person who is skilled in treating the unknown. Animistic colorings survive so that the entrepreneur and the oracle are seen as synonymous. The religious universal in our theory had not given in entirely to the economic world and to the potentials of man. The idea of profit maximization as seen in the theory of the firm does not escape this indictment.

The entrepreneur in a generic sense should be viewed largely a product of modern industrial society. For this society is the only one that has learned that man is a problem-solver of no mean capabilities. True, man cannot control nature in all its aspects to any great degree, but he is getting to know as much about it as he knows of man's behavior. Classical theory arose in a world in which it was believed that man knew all that he needed to know--an inheritance from Plato. How much better off he might have been had he instead listened to Heraclitus of Ephesus is hard to say! But even the economic universal as we have come to accept it is now of descending order of importance as a result of our new thinking with its strong Heraclitian origins.

The Entrepreneur and His Decision-Making

By some views we would be entirely out of line to suggest that entrepreneurs on occasion can become so timorous or so evanescent that stagnation sets in. In a sense, this is the position taken here, nonetheless.

The usual argument is that everyone knows what attitudes are and we need only change them or the setting which generates them to effect economic expansion. (My own view is that Marx was a dupe of his own theocracy.) Set right the environment and the entrepreneur will blossom forth. But, is not this conception of him rather incomplete? Since we find many primitive societies in which the value-structure from the standpoint of growth generation is almost irreparably sapped, then how can there be in them such rational reflection and creativeness as would restore the personality of the entrepreneur? Are not our present values of such nature that they imply action going out from a form of knowledge as new as it can possibly be?

These are some of the questions that arise as we seek to organize our argument about the functions of the entrepreneur. Whether they can be answered remains for the future to say.

We may agree that as a social being "man is the most highly charged unit" of economic expansion. Naturally, we cannot measure the energies which he generates, in the same sense that we measure the output of an electric-energy producing unit. That is, we cannot say, here is one of 1000 KW capacity; or another of only 100 KW capacity. In a sense this measurement of generation of electricity is real. But the creation of ideas such as are antecedent to entrepreneurial action can only be analyzed through study of thought processes and communication. Nothing in our world is similar to this strangely singular capacity of man.

In certain societies man's life is a pattern of creativity as he seeks to accomplish goals or ends which to him are problematic. The entrepreneur himself appears to be especially skilled in idea creation of and in the application of ideas to new means of easing man's workload. The social sciences, and especially economics, are quite concerned with this capacity, for we have come to understand that man is of such nature that he can be an object to himself. We may say as Mead says, ". . . the apparatus of reason would be incomplete unless it brought itself into its own analysis of the field of experience." As model-builders, we economists seek to sweep creation along with reason into our thought processes about man and his activity. The entrepreneur is most vulnerable to rationality-creativity motivations. (Here may be the reason why we have steered away from putting entrepreneurial behavior into our models. It represents a high order of difficulty in formulation.)

Let it be understood, nevertheless, that the entrepreneurial function, along with the economic factors, is parametrically secondary. We need rather to unearth a describable relationship between both the function and production factors. In such underdeveloped areas as Appalachia (to use a current political image) we may note that resources once plentiful have been exhausted. Entrepreneurs whose concern decades ago was with the exploitation of the then existing resources have long since left. What remains in the way of "business" activity is hardly conducive of much employment. Those who stay in the region have largely consolidated their positions. They turn to monopolistic practices, and for the most, they prefer "to live on their measly two percent." The labor left behind approaches a subsistence level. Were it possible to join them with new-found capital, there could be a tendency for their marginal productivities to rise.

But such a juncture assumes of course the availability of capital and the breeding of or nurturing of some individuals who could take on the role of entrepreneurship.

Consider the familiar general production function:

$$O_t = f(L_t,\ C_t) \text{ at time t, where } O_t = \text{output at some time, t.}$$

It is usually assumed that at a given equilibrium an increase in the inputs of L, labor, and C, capital, will be at a decrease in both marginal and average product. The size of the labor force, while plentiful, is supposed "given," in that it varies monotonically with the size of population. Output varies thus with population. Herein is to be found much of the classical version of the pricing of productive factors.

The argument implicit (see Keynes, Lange, and Marx) may be furbished with an additional hypothesis: some of the people desire to increase their income and wealth. This desire tends to keep investment at a high level only so long as I, investment, keeps up with S, savings. Long-run decisions by owner-management (the classical term) presumably constitute the active element in this expansion. To be sure, there are occasions when no one desires to venture their capital. But this argument, it must be emphasized, would apply only to the already well-developed economies (*a la* Schumpeter) where the desire to maximize (perhaps "optimize") income and wealth is already operative.

It is conceivable, *however*, that consumption and investment would tend to expand under an expected rise in profits which is shaped up from the very beginning of the increase in I over S. Indeed, expansion in this case is soon amplified by a rise in saving. Lindahl contends that the early expansion phases are almost entirely financed in such manner, even though, sooner or later, there develops a decline in marginal productivity. Keynesians combine the multiplier and the accelerator to effect such an expansion. (I myself have reservations about the nature and significance of the accelerator.) Some students of the upward swing such as J. M. Clark and Gustav Akerman explain the accelerator as a kind of technical change. I would say that there is the possibility that technological change may readily offset the otherwise possible decline in output per unit of labor and capital.

The entire argument as handled by a host of other writers is at best vague, certainly strictly intuitive. That savings would lead to a decline in profits, as Marxians and Keynesians contend, is not clearly supported by existing evidence. In an industrial society the desire for wealth and income, both of which may take many forms, is not as greatly dampened by savings as is insisted. Available evidence points to the persistence of "pecuniary motives" (even in the U. S. S. R.). Thus, the classical stationary model is of minor value for our purpose, even though there may be single occasions when it appears applicable. Just as long as there is the possibility of income growth, stated "gross," the "owner-manager" tends to maintain investment. Most firms are guided by expected increases in sales, not by net income.

Some contemporary theorists turn away from the classical model, to hang the argument on the goals of the entrepreneur, on business, and on social attitudes. With some justification, Everett Hagen's fancy has been captured by this relation. He sets the economic organization into operation within a framework of social attitudes and forces. He supposes, as does Schumpeter, that the innovational drive is generated by a separation of ownership and management. The "acquisitive instinct" cannot be nurtured except in an incubator designed solely to promote the accumulation of wealth. (It may be impolite to say that Schumpeter's Continental European background shows through the seat of his pants; but it does.) In societies where the incubator has been scuttled, the entrepreneur has long ago jumped off any available bridge, and the wealthy who survive the fall of profits turn to relatively increased consumption and/or reduced saving, in fact to such degree that much of (physical) capital is eventually consumed, so that acquisition of wealth takes new forms. The Austrian case of capital consumption brought about by the break-down of the Hapsburg empire may be cited.

It may be further argued that in a variety of environments there are economic men who act as though they were rationally motivated to expand capital. In others, there is a lack of such men. The South could very well be a case in point. A number of southern states contains scores of wealthy families or their members, who, while they continue to operate their mills at some easily manageable level, "traipse off" to Kenya "to hunt big game" or to the numerous islands of the Carribean on elaborate fishing expeditions. They continue to "live high on the hog" through dividends provided them by millions upon millions of dollars, invested not in their mills but in blue-chip shares or non-taxable government bonds. All the while, such primary investments as are made originate largely with companies whose headquarters are located in Detroit, Cleveland, Chicago, Pittsburgh, New York, and other cities "north of the Mason-Dixon Line."

The South, as an example of underdevelopment, lost much of the limited entrepreneurship it once had had during the War Between the States or (whatever your inclination) the Civil War. Afterward, each in their own time, textiles, tobacco, pulp and paper, and chemicals industries arose to pour out products important to the region and elsewhere. Their development served to promote a modicum of increase in income and wealth. They also lead to an expansion of the production of basic raw materials. Population grew and much of it went into farming or into the mills that sprang up mainly in the Piedmont or on the Coast. For two or three decades there was fairly widespread capital expansion. And Henry Grady was virtually deified for his efforts to spread the new gospel, but these efforts were at the best only partially effective.

A Restatement in Model Form

Let us review certain strains of the above ideas. Today, the South, even as it is "urbanized," seems still to be the victim of a serious drought of investment. The fairly wealthy industries which arose after the Reconstruction Days, on into the twenties, and here and there in the thirties, could not or did not assemble enough local investment to absorb what is an essentially high elasticity of the supply of labor, and a labor which possesses only those simple skills that largely nontechnical farming generated on a wide basis. Given the supply of labor, it is not at all inexplainable why the increase in the South's income and wealth has lagged well beyond the rest of the nation. The theory of variable proportions, as some contend, might suffice to establish the nature of this defection. As we try to increase the use of labor, we usually eventually run into that point where it no longer "pays" to hire more of it. This point shows up well before the appearance of a zero marginal product of labor. We are thus back with Keynes, Marx, Lange, et al. Capital is applied under a given technology to that level where marginal productivity approaches or equals the going wage; or where

$C_o + C_{o+n} \longrightarrow MP = W$, where C_o is base capital and C_{o+n} is

capital change, MP, marginal productivity, and W, the going wage.

This proposition, however, is contrived to rest upon special assumptions about the nature of entrepreneurship, especially that it will expand investment only to a point in the proximity of declining marginal productivity.

A distinction must be drawn between the "coupon-clipper" or "rentier" and the entrepreneur, however. All too often these categories are confused. In numerous sections of the South the "rentier" group has taken over business management. There is a fairly general tendency to treat the worker as a retainer, but not necessarily in a patriarchal sense. In some sections a difference between the worker and the Medieval villein is actually hard to draw. The "sharecropper" and "weaving-machine tenders" are by no criterion the nobility of American labor.

While this treatment of labor gives a worker a kind of "impoverished security," it definitely keeps income and investment at a low level. The entrepreneur, were he regarded as the primer mover behind expansion and as the efficient planner of the uses of labor and capital, to the point where he is concerned that in the long run there need not be an equality between MP of labor with W, and of MP of capital with the price for its use, would be truly an oddity in the South. The South for the most part reflects only narrowly that peculiar behavior of the entrepreneur which leads to capital-expanding, capital-recovering, and capital-paying activity. What is being said here, in a word or two, is that economic expansion derives from the surplus generated from expansion. How much the entrepreneur serves the region is dependent upon such vestiges of him as remain. In the South the "entrepreneur" acts in much the same way as did the classical version of him.

Consider Figure 1. In it:

MP = the marginal product from use of labor

OW = the current wage

OW^1 = a subsistence wage

OL = labor used in an expanding economy

WMP = the entrepreneurial-capital surplus in an expanding economy

$OW^1P^1L^1$ = the share of labor product in a subsistence economy.

The area, $OW^1P^1L^1$, may be smaller or larger than the area, OWPL, but the area LPR is that portion of total product which goes to the workers of the subsistence sector of the region. This area may be much greater in some sections of the region than in others, so that LP may then move to the left, even under a declining use of capital: in effect, the smaller the vestiges of entrepreneurship, the greater the subsistence sector. This sort of relationship may be characteristic of an economy in which the entrepreneurial "spirit" (to borrow Sombart's term) has been replaced by a monopsonistic hire of labor. (I could list a large number of communities in the Southeast where this behavior persists, but I desist.) The retail establishments that remain bend to the wishes of the monopsonist. They see to it that their wages do not compete with those paid by the monopsonist. Figure 1a shows what could happen were there a shift in the product curve.

But these models have to be expanded upon, if we are to understand more fully the role of entrepreneurship as is envisaged here.

To do so, we can rewrite the production stated function above as follows:

(1) $O_t = aP_t^m C_t^e$ where a, m, and e are constants and, as in the Cobb-Douglas function, m and e are each less than unity and may add up to unity. P is for the moment introduced in place of L, so that we may say that the labor force is a constant proportion of population. Growth is similarly proportioned, not at all an unfamiliar case.

For reasons as shall be developed presently, G is now substituted for C.

Equation (1) may be restated as follows:

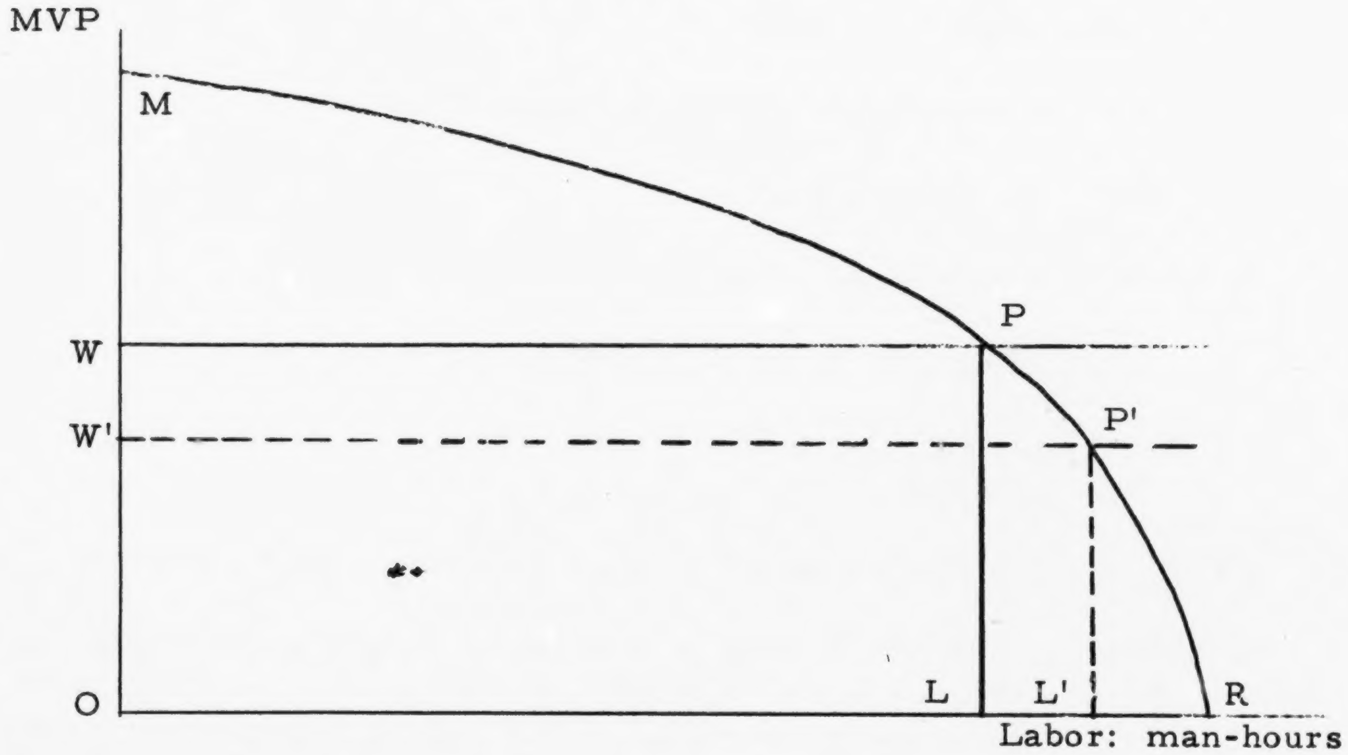
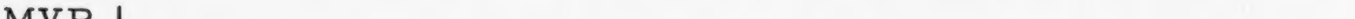


Figure 1



(2) $O_t = kG_t^e$, an improved form of the Cobb-Douglas function. Here k is an index of productivity of labor. k measures how much the labor force produces in conjunction with G (here called gross investment). In net, it tells us how persistent labor is, given capital. It is therefore a reflection of labor's skill and adaptability to change. If G is not greatly affected by external economies and technologies, then O_{tn+1} can actually be smaller than O_t. If this is the case, stagnation of enterprise is eventually the rule and the daring, who cannot find jobs, migrate to other regions. As already observed, those who remain reverse their values and practices in such a way that the economic order again evidences a remingling of the religious and economic universals. The pattern of structure of economic activity is then so molded that a tabula rasa may be fairly easily fitted to it.

To pursue the argument further and, later on, to state tentatively the nature of effective entrepreneurship, we now explore an idea garnered from Lundberg.[8] We make G^e a variable. By this conception of it we can explain economic expansion and note the function of the entrepreneur in the expansion process. For this purpose let us rewrite (2) as:

(3) $G_{t+1}^e - G_t^e = hkG_t^e$, where h may be a constant.[9]

Now, we see that it is the increase in the e^{th} power of G which is considered proportional to the level of income.

We next substitute (2) into (3) to derive

(4) $G_t^e = G_o^e (1 + hk)^t$,

where G_o is the stock of capital (comparable to Lundberg's G_o) at a given initial time period. G_t is therefore the growth of G over time, relative to the size that hk assumes over the period surveyed (comparable to Lundberg's G). What is really involved is a transformation of G_o^e to a new G_t^e through the expenditures by the firm on commodity production costs which are actually realized, as well as those costs that will sooner or later be realized. An accounting process of some magnitude is actually involved but that matter is deferred to another time. (Note: depreciation and obsolescence are implicit.) Now we have converted G into a variable form which at the t^{th} power gives us the extent of expansion as influenced by both hk and time. G_o^e and hk are thus the two inputs that determine G_t^e's magnitude.

---

[8] Erik Lundberg, Economic Expansion, Stockholm, 1937, Chapter VII.

[9] Cf. R. D. G. Allen, Mathematical Analysis for Economists, London, 1938, p. 288.

Given the costs of increasing hk and G_o, the entrepreneur may make decisions on whether it is best to "up" productivity, and on whether the strength of the desirability to accept the risks in additional new internal investment, rather than to continue to increase current capital stock or equity. This is not an uncommon situation and the decision to increase new stock naturally reflects the general willingness to accept risk.

Thus, the propensity for horizontal expansion of textile-mill machinery, as evidenced by purchases of additional units of the existing machinery, is a familiar sight in the South. Risk-taking is minimized as far as possible. Japan's textile mill entrepreneurs, on the other hand, have turned generally to new machinery and new ways of production. We all know that their return by such decisions is far greater than for many southern mills. The increase in hk is also tantamount to a change in the technical structure of the firm, by which new skills as well as new machines are created. A decrease in capital value over time, writes Lundberg, ". . . need not indicate a decrease in the quantity of capital as expressed in terms of its productive capacity."[10] "Technical capacity" would instead increase.

In turn, by this conception of capital formation, we get away from the familiar equality, $I = S$. By its very narrowness of expression, were we to use it, we are led to neglecting the truly significant entrepreneurial decisions, and we avoid the danger that the "marginal efficiency of capital has turned into a trap as a means of analysis." Idealistically hk is the source of economic expansion. It covers a variety of changes, for example, in education, general human investment, increased business acumen, research, and improved workmanship and quality control. (We could expand up on hk, to make it a matrix to be more inclusive of specific investments than it now is.) So conceived, economic expansion may be reformulated as $\Delta hk/\Delta G_o^e$. This expression is a bit different from the equation derived by Lundberg. The Δ is used to indicate a finite change. (We could also, as do Tinbergen and Bos in Mathematical Models of Economic Growth, resort to infinitesimal changes.)

As Δhk relative to ΔG_o^e rises, there is a tendency to reduce subsistence labor and to increase that labor devoted to the capital intensive sectors of the economy. Concurrently, there is an increase in capital productivity, contrary to the familiar classical and Marxian arguments about diminishing marginal productivity of capital. Entrepreneurship which sees advantages in technical change in capital, research, and in human investment is income-generating. Δhk, while it itself may be called "capitalistic surplus" by those who may wish to, is basically the creator of the means of payments for new managerial and labor skills, general scientific ability, the services of governmental agencies, as well as the returns to capital and labor. There is a general gain, accompanied by a decrease in subsistence labor. (It might be of interest to observe that here we find a concept useful to explorations into "welfare economies.")

---

[10] Lundberg, op. cit., p. 159.

The Goal of Economic Development and Δhk

The fundamental problem of any underdeveloped area is thus to understand that 15 to 20 percent return is far better for everyone than is "a measly 2 percent for the rentier group." Furthermore, Δhk shows how far off base Lord Keynes was when he talked of building more pyramids, more memorials to the quick and the dead, or even of super-dooper highways or electric generating plants, without much regard for alternative uses of resources. In modern urbanized society, new schools and high-speed railways may be far superior from the standpoint of generating income and wealth, as well as a pleasant way of life, than mausoleums and pyramids. Galbraith's diatribes on rocket-tailed and chrome-plated automobiles with 300 or more horsepower engines under a "sculptured" hood is much to the point. (We could add that we might very well dispense with the Beverly Hill-Billies, McHales' Navy and rerun after rerun of class B movies on TV. It does seem that decision-making in some areas of economic endeavor has sunk to new low-levels, so that in several sectors of our economy we are on the way to another scuttling of entrepreneurial perspicacity.) Here and there, mediocrity, not creativity, is again gaining hold.

To note a plausible means of stating the nature of the decay of entrepreneurship, let us multiply hk by the difference (1 - n), to give us:

$$(5) \quad (1 - n)(hk).$$

Here n is construed as a value which shows us the willingness or unwillingness of business to assume risk. It provides us with a form of utility index, v, (where always ≤ 1) by the subtraction of n from 1. Thus we may construct a table of v's which could indicate the weight assigned hk by entrepreneurs. In Table 1, the point of indifference to risk taking is $v = 0.5$. Below this value for v, the utility values are such that entrepreneurship is on the wane. Above 0.5, it is on the upswing. The argument offered here is that, encouraged by his evaluation of the information set before him, the entrepreneur assigns some value to risk as is entailed in hk that prompts him to act one way or the other. In underdeveloped regions v tends almost always to be less than 0.5, a reflection of the possibility

Table 1

$v = (1-0) = 1.0$

$v = (1-0.1) = 0.9$

$v = (1-0.2) = 0.8$

$v = (1-0.3) = 0.7$

$v = (1-0.4) = 0.6$

$v = (1-0.5) = 0.5$

$v = (1-0.6) = 0.4$

$v = (1-0.7) = 0.3$

$v = (1-0.8) = 0.2$

$v = (1-0.9) = 0.1$

$v = (1-1) = 0.0$

that monopolistic behavior has found fertile ground, as each owner-manager of a firm strives to escape uncertainty in decision-making.

The social setting or the economic order which comes to prevail under small v's abounds with the dread of facing change. But as enterprise arises and there is a favorable evaluation of hk, then G^e_o grows to G^e_{t+n}. The entrepreneurial capacity in man is reawakened. Almost always creatively oriented, man now "feels" that a value better than 0.5 can be affixed to hk. Because of the impact upon the business community of new ideas (from within or from without their spheres of activity) other owner-managers raise their sights on profits and reevaluate the possibilities of hk favorably and they press forward to enter upon new investment. What is here meant is that some owner-managers or would-be entrepreneurs have now minimized the risk supposedly entailed in such change,[11] which has both social and economic dimensions that portray the behavior of the entrepreneur under different conditions of propensities to bear risk.

In the stationary economies, (where v is 0.5 or less) while there may be savings (out of surplus), they are either exported or converted into precious metals and jewels, "golden Rolls-Royces," or else into Keynes' far-flung monuments.

---

[11] See Gunnar Myrdal, Prisbildningsproblemet och Föranderligheten, Stockholm, 1927.

Fundamental to the argument is the fact that no one, not even the entrepreneur, can know all there is to know. We economists prefer then to fall back upon a wholly irrational explanation of behavior when we go on talking and writing as though entrepreneurs possess such high qualities of foresight as others would not presume to possess. At best, an entrepreneur is a person who, though he may have better information about an idea so as to affect hk positively, he also assigns higher v values to hk than do others. In net, some of us undervalue risk, others overvalue it. Those with the propensity to undervalue see possible gains from their own use of savings. We treat here a relatively long-run phenomenon.

Model Building and Its Meaning for the Issue at Hand

We economists are inclined to be bombastic when we glory in our model-building. Of ancient day, Plato, Thomas Acquinas, Saint Augustine, Galileo and Newton were all pretty expert in this task. What is significant today about model-building ~~is~~ that we are coming to realize more firmly than ever before that man has grasped the purpose and potentialities of his intellect. In some instances, models have become very useful devices for expanding our theoretical horizons and aid us in our intellectual speculations. But if we press this advantage to the point where the model becomes the end, rather than a means, then we may be accused of a vicious form of instrumentalism (extreme technicianship). Models can only give us some understanding of reality. They are not reality. A model is merely an hypothesis about reality, in sharp contrast to the synthetic a priori of Acquinas and Augustine, and in a measure, to Kant. We must understand that in this sense a model is no more than a system for expediting analysis; and a system which is man-made as far as we social scientists are concerned.

Adaptation to the world around us, as we see it today, is by no strength of our intuitive capacities a matter of the survival of the fittest. I certainly hope that we have managed by now to escape Plato, Bentham, Spencer, and the whole lot who saw in man simply an adaptive creature. The process by which we shape society is essentially continuing and we harken to use our interpretations of society or economic order, as the case may be, as a means of guidance in our formulation of hypotheses. Under this interpretation, we economists are constantly relating changing inputs to outputs. The effective entrepreneur has gained skills in understanding and analyzing of this ratio, especially of the relationship of information to the process of decision under uncertainty. Now, whether he is peculiarly gifted in the evaluation of experience, and hence, in the formulation of hypotheses is a question left unanswered by the economist. It could be that he has but a kinship to the laboratory technician or, more generously, he has an acute capability of piecing together the essential variables and in judging their values to explanation of change.

I am tempted to say, much as Heraclitus of Ephesus once wrote, "The Lord whose oracle is at Delphi neither reveals nor conceals, but he indicates his meaning through hints, and the priests at the oracle are skilled in finding out the hints." And so with the entrepreneur. But such a view of him carries us too far back in the time and mind of man. Over centuries "entrepreneurship" has changed its role. No longer can it be said to place its faith in the oracle. The entrepreneur lives in a future, far distant in meaning from the future as seen by the Grecians, as well as in time. The future lies barely in the present, to the extent only how he construes it, or how he imagines it to be, and how he imagines it in the process of becoming. Choice among different uses of resources, under a changing front of ideas, invokes for him a set of events, past, present, and future. Moreover, there are definitely alternate sets. What events appear in his horizon depend upon his imagination, and surely, the formation of imageries as a capacity varies significantly from man to man. Hence the reason, as noted above, for stating that people evaluate expectations differently. Conceived therefore as a process, imagery is definitely related to creativity, or the ability to be creative.

Classical and neoclassical economists both assumed that man generally is economic, in the sense that he sought to make the best possible choices among alternatives of resource use, resources given. But the practitioners of these forms of economics went no farther than this in their characterizations. The alternative uses were not set into a background of imagery and creativity. Even Schumpeter's concept of the entrepreneur as an innovator (which was first stated by Walras) lacks much in the vitality and the elegance that really constitute the nature of the process of choice by this group of decision-makers.

Marshall, to be sure, dramatizes quite effectively the relationship of costs to demand, especially in his conceptualization of "derived costs." In a measure, the entrepreneur's decisions are derived, in the sense that he must always keep in mind the consumer's choice patterns. It may be best therefore to view the entrepreneur in this setting as a possessor of this ability, rather than as an autonomous innovator, for his innovations are in a large measure the product of his expectations about the demand for his product. What stimulates the expectational pattern is more than anything else the "feelings" which the entrepreneur entertains about consumer demands and consumers' dissatisfactions as to their present goods and services. The failure on the part of the economist himself to apprehend this nature of consumer behavior may have something to do with our own carelessness in conceptualization of the entrepreneurial function. Obviously, in a stationary society--the usual assumption--there need be little if any significant decision made about the thus efficient use of resources. Comparative statics do not add much in the way of explaining behavior of either entrepreneur or consumers in their making of choices.

Keynesian economics tend to relegate the entrepreneurial role to the choices among investments and thus succeeds in burying much of economic behavior under changing exogenous decisions. We of course know of the play upon consumption through the multiplier but at its best the multiplier treats aggregates only under short-run conditions. The result is the focusing of thought upon the demand for money, and consequently, the theory has little meaning for the explanation of long-run economic expansion, especially in the study of such stagnant regions as Appalachia. The evidence about the economic stati of the people of this and similar regions, and especially about the want patterns of these people is so fragmentary that we are hard-pressed to get down to the roots of the problem of stagnation, that is, of bringing that region through its own action into a state where new ideas will be accepted and acted upon.

What I am saying is that entrepreneurship thrives only in certain soils, and not in broad environments in the commonly accepted sense of the word. It is hardly likely that large road-building programs will enable the people of Appalachia to see themselves as they should, unless the roads become means of escape from present ways of living. Whether a "new educational program" will have much effect upon their choice is debatable. But, if in some manner we can induce a few in the area to change their roles, to become leaders for new ideas, then we may hope for change. Entrepreneurship roles may be created by those who know something about effecting a new leadership. In fact, there is a possibility that entrepreneurship may be brought to life, even in the poorest of regions. I have seen it happen through the encouragement of people to look at a new arrangement of their own want patterns. But it remains debatable that "permances" of entrepreneurship are present. Entrepreneurship is as much an indeterminacy as is the growth process.

Conclusion and Review

Some economists imply that there is no room for the entrepreneurial function in economic theory. This implication is understandable in the case of the classicists and the supporters of the theory of the firm. In either case there is little room for the study of uncertainty.

In those cases when dynamic models are treated, deemphasization of the function cannot be given our blessing. Yet again, economists treat the question summarily and with little hope for a valid theory. Sometimes, the argument for this fragmentation of theory is supported on the grounds that the entrepreneur thus treats simply irrationality. The injection of his function into theory would only succeed in making the theories of price and capital formation largely tenuous; and for the specious reason that the entrepreneur does not always (by the new thinking) seek to maximize return. (To be sure, there are those writers who, as does Erich Fromm, view the market orientation of any economy as most undesirable. We here must ignore such contentions for they are simply a reflection of an inability to comprehend the place and role of the market economy in socioeconomic progress. But then, I have never been sure about what it is that Fromm and other critics of the entrepreneurial function stand for.

The entrepreneur is a unique personality in the sense that he is a means of treating "those evils" which must be averted to keep man on the track of exploration and "wandering." (See, the quotation from Whitehead at the masthead of this paper.) To be sure such talents are not confined to the entrepreneur necessarily. Yet he appears to possess more qualities for the purpose than do most of us. Learning how "to avert evils" is not, by any chance, a simple task. Throughout the history of mankind particular men have evidenced great abilities in this direction. In the relatively recent appearance of the enterprise society, these abilities have been directed toward the formation of enterprise.

In the early days of the enterprise society the entrepreneur, whatever he was, no doubt made "rule-of-thumb" decisions. As the centuries of experience grew, he himself sought to escape rule-of-thumb ways and in time he avoided more and more the atmosphere of irrationality which must have surrounded him. It is in the contemplation of this irrationality that some economists (and others) have sought to deny him and his role. What they do not see is the simple fact that the world, if it is to advance, must be endowed with something closely akin to entrepreneurial propensities and capacities. The so-called "capitalistic system," whatever meaning may be ascribed to it, has been the most successful in the creation of those elements that are essential to economic development. It has permitted a freedom of sorts, in which motivations necessary to undertaking of new industries and the formation of productive skills have been singularly superior to any other form of socioeconomic organization. The entrepreneur has provided much of the setting for motivation of people to accept the new.

Now, it is quite possible that the role of the contemporary entrepreneur is set in an atmosphere of uncertainty and irrationality, even though he is very much more sophisticated than were his early forebears. Yet irrationality cannot be completely constrained. It arises from the creative propensities of both entrepreneurs and the people whom he seeks to accept his changes. There can be no perfection about change. Those who speak of it in this sense are still largely attached to the circularity of thinking espoused by Aristotle and Plato. The world of change is a world of uncertainty because of the very reason that it is also a world of creativity.

Creativity may not be entirely rational! The Humanists of the Ancient World cling with might, and possibly main, to hoary tradition about the nature of experience. To them, experience, upon which creativity is made to rest, is basically sensual. To the post-Newtonian-Leibnitzian it goes well beyond the sensual; *what we perceive is of less importance than what we conceive*. This point has never been fully understood. Hence we should survey a further aspect of creativity.

Whitehead provides a lead. To him life can be abstracted in the sense of setting it into a framework of universals, and creativity still remains. But, as do many of the critics of the enterprise society, if we seek to abstract creativity from the very first, life has no meaning. Creativity is always latent to and essential to life. But creativity cannot be expressed wholly "objectively," so those who look toward the abstract form of the organization of man and his environment tend to throw out creativity simply because of its "highly subjective qualities."

Creativity does invert the Newtonian-Leibnitzian position for it conveys the idea of "process" or of something becoming something that it was not. As has done Sorokin, the sociologist, creativity cannot be reduced simply to the passing of time and measured over a span of years by the number of inventions and patents. Instead, creativity implies that there can become more than one thing; that the world is made up of numerous separate things. Therefore, there is no final unification (or a maximization) of the whole of any organization, because the present setting always evidences a number of things coming into being. This lack of unification is also the nature of "progress" or "development." Unification is the outcome of process in the sense that process enters inherently into every happening and is just not an inherent quality of the thing. The ultimate character of the socioeconomic and physical worlds is a matter of space and time. We find creativity of one sort in entrepreneurship--the effort to meet the demands of the people served by it, and in another form, in the very people served. These people seek constantly to resolve their dissatisfactions.

If we acknowledge and accept this meaning of creativity, we are definitely at odds with the theory of the firm. We need to differentiate one organization from the other. And we need to explain what particular subsets of satisfaction do arise. In a word or two, the actual forms of activity which seem to be with us must be defined, yes even explained. Man is a creature of self-organization in his self and in connection with others. There is some kind of organic unity. When each of us comes to a point of satisfaction--momentary though it often is--we are a part of a process, in which many single elements may have come into being and are then unified. Thus, creativity is relevant to the matter of differentiation of things and to the issue of explaining the patterns of things which we experience. Truly, if there is activity there is a creativity. And, says Whitehead, the emphasis should be on the "self-creative." Everything experienced is self-directive as to the emergence of the pattern which it realizes. There is empirical evidence for this nature of occurrence among all organic patterns that come in being. We look, if attentive, to the self-organized elements of an atom, or of a human being, or of a value system. There is a telos of each pattern which we find in the world and in society. In an inanimate thing, say U_{235}, aim or end and becoming are inseparable. In an animate thing, such as the human being and his juncture into groups (organizations) there tend to be separations. If there are differences between inanimate and animate life they are differences of degree, not of kind.[12]

Certainly, much of what is supposed to be a theory of entrepreneurship in past and recent economic writing is largely descriptive, non-theoretical. This point should be evident. There are incompatibilities between classical and present-day theory of the firm and the theory of organization. The theory of the firm with its maximization postulate is quite asymmetrical. But the theory of organization is symmetrical. Small wonder then that there are many who fail to comprehend the limitations of the theory of the firm. Knight has often observed that the important problem in economics lies in the change of the organization. His unhappiness about the theory of the firm stems from this position rather than from an unawareness of the theory. It is in the effecting of change under uncertainty that the role of the entrepreneur takes on primary dimensions. In the theory of the firm we are all too much concerned with a given goal and not with those activities inaugurated by changes in organization; and hence, are end-problematic.

---

[12] I suppose I borrow much of these ideas from Whitehead's Process and Reality and his Adventure in Ideas and from Mead's Mind, Self, and Society. Mead, it should be noted, was a rather interested and highly qualified scholar of Whitehead's philosophy, as well as of American pragmatism. (It may be erroneous to draw any significant distinction between some kinds of pragmaticism and empiricism.)

When Mead says that knowledge is social he means that the statements which we make about socioeconomic conditions, change and intended as explanatory of change, are the products of a screening of new ideas about change through a system of values. This system of values may itself change over time.

In any organization, social or natural, knowledge in its way plays an important role. The idea of "facts" is much too vague for our use and this observation is made for the reason that we wish to make it clear that facts may not even be subjective, let alone objective. If we as a people in a given region accept a value system, the only fact that appears is the one which says that, if we are all to respond to a proposed change, our acceptance of it depends upon our acceptance generally of the value system. Otherwise, as Mead would emphasize, there could be no organization, not even knowledge.

Knowledge accumulates through our own ideas or by acceptance of others' ideas. The human being, who lives in a space-time dimension, has the capacity of extending the past into the future, well beyond his experience into today's living. Man, capable of generating new ideas and of receiving those from others, after surveillance of them, is the only being capable of creating an organization that is itself amenable to change. The organization which he evolves may be viewed as a structure of roles and activities knitted together by lines of communication, through the use of a common code and its evaluation by accepted scientific methods. The trouble with an attempt to expand the economy, the nearly always advancing units require increasing amounts and kinds of knowledge. Indeed, I believe that what Knight is trying to say about the entrepreneur and his relationship to uncertainty is that the demands for knowledge for economic decision-making are themselves increasing by great strides and that the entrepreneur has become our primary means for bridging this gap.

He, furthermore, must convey his findings down through the organization in such a fashion that those in lesser roles than his will be adequately creative of new ideas on how to effect the changes as seen by the entrepreneur. It is this last conception of the entrepreneur that has tempted some writers on the subject to see the role of entrepreneurship as extending through the organization. And in a sense, they are correct; for in a dynamic society and economic order we find that knowledge tends to assume individual proportions, even though it is screened through a social value system. What happens is that the individuals are motivated to accept the value system and then they accept the knowledge, some with a greater degree of certainty than do others.

Knowledge then changes as each individual seeks to reckon with the value system. The one distraction between the individual and the organization is that the organization compared to the individual is quite relatively permanent. The greater we as individuals tend to overvalue uncertainty, the more likely is the chance that we tend to deny change, and in so doing, we come to live as our forebears lived.

If there is a rise in the willingness to accept risk, on the other hand, the greater the chance to accept new ideas, and then we seek change rather than deny it. We "get fed up" with the old and we strike out for the new.

In this congenial atmosphere the entrepreneur again flourishes. After all, creativity is a universal characteristic and it lies latent until there is search for new ideas and new knowledge.

But how may we explain the appearance of entrepreneurship in the many underdeveloped areas? It may sound ridiculous to say: by osmosis. Yet, such a process seems to be abroad today. In the modern world, knowledge and new ideas spread almost as do disease bacteria. How to explain the worldwide revolution of the lowly is the real problem. What has caused them to want change? Certainly, it cannot be an inherent, intrinsic entrepreneurial "instinct." The process of acceptance of socioeconomic advance has become almost an obsession with the lowly.

More than anything else, there is the likely hypothesis that man fairly generally has come to a realization that his salvation is not in another world but in the present. For too many centuries he has been bound by a static value system. Now, he has begun the battle against it. He does not quite realize the nature of either the value system essential to growth or of the value of knowledge as the means to changing the value system. Perforce, much of what he does is to rebel against any and virtually all authority. As some writers insist, this unawareness is not difficult to explain. Widespread illiteracy and the inability therefore to understand the fine points to the meaning of progress may be the chief enemies of the lowly. They are dissatisfied and we, who are more fortunate than they, are all too often envious of almost any attempt to encourage change except within our own precincts. But there must be change in the domain, the range, and the relation of the sets and subsets of conditions governing socioeconomic progress.[13] The rise of self-consciousness of the image of development and of knowledge, rather than hampered, needs to be bolstered by the fortunate.

---

[13] Ibid.

98

It is not too absurd to say that all of mankind has potentialities and that all peoples may be brought into a flowering stage if the fortunate only see that what others gain will also be to their gain. Of all economic theories the labor-theory of value has done more to hold back advance than any other, for it tends to put a limit on the pie. It still has a strong hold upon society generally. (If we wish to look for miscreants, we should turn back to Ricardo and Marx.) Rationality is a means of relating domain and range of elements of statements of thought. Creativity comes before rationality. A powerful function of creativity is to bring into being new ideas about the organization of man, materials and energy. The function of rationality is to effect such a filtering through of those ideas that will initiate growth along the most efficient lines.

How do we deal with the illiterate and traditional value systems? An earlier symposium of the Agricultural Policy Institute treated extensively this question. I would suggest further study of its publication: Planning Socioeconomic Change. And may I add an observation or two?

In my own experience in trying to kindle stationary communities into action, I have found it best to "convert" those men who are just coming into leadership of a community to that point of view that entrepreneurship "can be created at home." I have had success in this task in several southern communities. But I shy away from those communities where there is no such leadership. In time they may come to "see the light" through contacts with the successful. The job is far from easy. I believe that on the average it takes a minimum of two years to build up the steam necessary to launching of a developmental program. In other words, it takes patience, coupled with an understanding of the folkways of the given community. And, do not "preach" theory as I have done here. "Talk" possibilities and what it takes to effect them. One thing is clear, the program must be value-sided as well as ends-problematic! In this hothouse entrepreneurship may come into being and flourish.

A CRITICAL ANALYSIS OF THE AREA REDEVELOPMENT ACT AND LOCAL SUBSIDIES TO INDUSTRY

Anthony M. Tang
Vanderbilt University

Introduction

Localized chronic economic depression or simply poverty is not a new phenomenon in this country. Indeed it can be properly regarded as a concomitant of economic progress. Only under a particular type of long-run equilibrium, best termed as stagnation, would one expect to find a setting in which depressed areas may become conspicuous for their absence. But then with population growth localized poverty is apt to be replaced by generalized poverty. Nonetheless, few of us felt any urge to do something about the problem until quite recently. Although, unlike the "unreconstructed" Southerner contemplating the region's depressing socioeconomic landscape, Americans did not quite mistake warts (depressed areas) for beauty marks, the ideal of self-help has been too well entrenched to permit national action programs. Beginning with 1955 it took Senator Paul Douglas six years to get federal depressed-area legislations to move from the tinkering level of instigating locally-financed programs to the point of bringing outside resources to bear on the problem. Without denying the nobility of the principle of operation bootstrap, one can rightly raise two questions. The first is factual: Are depressed areas in a position to help themselves? The second involves equity and responsibility: Is the depressed area problem a national or local problem? This in turn leads to the question as to why and how these areas became what they are.

There can be little room now for equivocation on the first of these questions. Poverty tends to perpetuate itself, and the cumulative mechanism is often strong enough to offset equilibrating market forces even when strengthened by such local action programs as subsidization of industries. The proposition would remain valid even if the national government pursues a vigorous fiscal-monetary policy in implementing the Employment Act of 1946. And as we shall argue later, while local programs are capable of affording some temporary relief, they could give rise to socially undesirable results in terms of the location of economic activities.

As to the question of equity and responsibility, we are indebted to Professor T. W. Schultz who in 1960 proposed with characteristic insights that the gains from economic progress tend to be well-diffused among individuals and communities while the losses from it tend to be narrowly distributed.[1] The policy implication of the statement can hardly be clearer. That is, a forceful case can be made for redistributing these losses. This of course is precisely what today's anti-poverty programs attempt to do. Schultz's insight may not be new. But its currency serves to provide an unequivocal basis for contemporary federal aid programs financed out of general tax revenue. The present Administration's successes with its anti-poverty programs suggest the emergence of a popular and legislative concensus that promises to institutionalize domestic aid to the poor areas much as it has foreign aid. The recent flurry of action programs notwithstanding, the Douglas Area Redevelopment Act of 1961 not only constitutes a first break with the time-honored principle of self-help but serves in several essential aspects as a prototype for later legislations. The purpose of this paper is to consider the economic bases for the Act and to spell out the implications of its principal provisions taken in conjunction with local community development programs. The enabling act expires this year. The Administration has prepared a new bill encompassing broader scopes and greater flexibilities. Although its passage is virtually assured, it is probably premature to attempt an analysis of its new provisions. The paper, therefore, takes up the 1961 Act as interpreted and implemented by the Area Redevelopment Administration. The ARA addresses itself to both urban and rural depressed areas. In line with the sense of this workshop, the paper considers the problem as it bears on rural poverty only.

The Economics of the ARA

Local Industrialization as the Focus

The principal provisions of the ARA are: (1) industrial and commercial loans up to 65 percent of the cost of land, building, equipment, and working capital, with a mandatory 10 percent to be supplied by the state or local community; (2) loans and grants to local communities for public facilities; (3) retraining of the unemployed with subsistence payments; and (4) research and technical assistance to local communities, including the nondesignated areas.

Not surprisingly the bulk of ARA commercial and industrial loans went to manufacturing concerns. The disputed status of the economic base theory notwithstanding, there can be little doubt that industrialization affords the most promising avenue to a solution of the problems confronting the depressed rural areas. As Spengler puts it: "Growth of manufacturing will probably do more than enlargement of any other single set of economic activities to enable the South to absorb its excess agricultural workers and large prospective increments in its labor force . . . ."[2] The facilities loans and grants also went largely to communities whose development plans were industry-oriented. Similarly, technical assistance is concerned primarily with the development of local industrialization plans. The only provision that is not bound up with local industrialization is the retraining clause. However sound the rationale for local industrialization may be, as given by the proponents of the ARA, it rests on nothing more than the direct and indirect creation of jobs in areas of unduly heavy unemployment or underemployment. Inasmuch as the ARA contains no provision to accommodate concurrent agricultural reorganization, a sounder basis for the program would be obtained if farm readjustment and income can be shown to benefit from industrialization in ways other than simple labor adjustment.

---

[1] "A Policy to Redistribute Losses from Economic Progress," a paper prepared for a labor mobility conference, Ames, Iowa, November, 1960.

The Schultzian Locational Hypothesis

Here again, we owe our insight to Professor Schultz who attributes localized agricultural poverty to the spatial pattern of industrial-urban development. The latter development influences agricultural organization and income in two important ways. First, local factor and product markets serving agriculture tend to be more efficient in or near the industrial-urban complexes, thus facilitating the needed farm reorganization as demand and techniques of production change. It should be noted that this aspect is of particular importance in agriculture because typical farm firms do rely on local markets to a much greater extent than the typical industrial concern and because with few exceptions farm areas have been confronted with downward adjustments which are more sensitive to the restrictive effects of imperfect markets than expansive adjustments. Second, industrial-urban development influences farm productivity through its positive effect on human investment. There is now a substantial body of literature on ways in which human investment, both in and out of agriculture, contributes to productivity and on the rate of returns to this investment.[3] Schultz's three recent thought-provoking volumes are worthy of special mention.[4] However, with political subdivisions taken as an unit of observations, there need be no close relationship between local investment in the human agent and the resulting output. This is particularly true since migration among areas can be highly selective. At any rate, available empirical studies bearing on Schultz's hypothesis constitute attempts to measure at least implicitly the total effect of both transmission mechanisms--market imperfections and human investment--rather than gauging the separate influence of each.

---

[2] Joseph J. Spengler, "Demographic and Economic Change in the South, 1940-60," in Change in the Contemporary South, Allan P. Sindler, ed., Duke University Press, 1963, p. 43.

[3] This hypothesis, with its twin aspects, can be gathered from T. W. Schultz's The Economic Organization of Agriculture, McGraw-Hill, 1953.

A number of such studies have appeared over the last ten years. Although the preponderance of their findings seems to support the hypothesis, this judgment may not be shared by all. Because of its bearing upon the foundation of the ARA, this is probably a propitious time to assess where Schultz's hypothesis now stands in the light of available findings.[5] In trying to put the status of that hypothesis in proper perspective, we shall mention the following aspects.

1. The testing of the hypothesis is best limited to farm areas where the needed adjustment in their agricultural plant has been downward. It should not be applied to those exceptional farm areas in this country where the adjustment has been upward contrary to the national trend. Expansive forces may prevail in such areas because of competitive shifts among regions. The shifts may be due to the direction in which technological development happened to be headed or to windfalls (e.g., public irrigation projects) accruing to some areas.[6] In cotton production, California's expansion of its agricultural plant is a case in point. Windfall may be identified with the rise of irrigated farming, and technological development has been such that it lent itself more

---

[4] T. W. Schultz, The Economic Value of Education, Columbia University Press, 1963; Transforming Traditional Agriculture, Yale University Press, 1964; and Economic Crisis in World Agriculture, University of Michigan Press, 1965.

[5] In the main, the work of the Vanderbilt group gives strong support for the hypothesis. See, for example, the summary article by William H. Nicholls, "Industrialization, Factor Markets, and Agricultural Development," Journal of Political Economy, August 1961, pp. 319-40. Other studies give equivocal or no support in that in particular places and times farm incomes were found to be determined by factors other than industrial-urban development.

[6] The shifts can also be attributed to unequal capacity to adopt improved techniques among areas. But this aspect falls under Schultz's hypothesis concerning market performance.

readily to irrigated than to dry farming in the Old Cotton Belt. The point is that the restrictive effects of an imperfect market are felt much more keenly in areas where downward adjustments are called for. It is not surprising that Sisler should have found no relationship between local industrial-urban development and farm income in the Pacific region. His inference that "high levels of agricultural income can be obtained without substantial local urbanization,"[7] while formally correct, would seem to imply in our particular context public policy for depressed areas that is inconsistent with the reality of mounting farm surpluses.

Douglass C. North, relying upon the export base theory, argues that agricultural development--instead of being accorded a passive role as Schultz's hypothesis would have it--should be regarded as an engine for later industrialization and general economic development. He points out that historically there are "a myriad of . . . possible illustrations" to show that regional economic growth had been so initiated.[8] This is undoubtedly true although exceptions are also legion. The failure of the southern cotton export base to generate industrial and other expansions before the Civil War is a notable case in point. At any rate, North's criticism of Schultz's hypothesis, however valid in a historical context, is of little avail in today's setting in the light of its policy content. Are we to suggest agricultural expansion in the depressed rural areas in order to generate other economic activities?

2. Sisler in the work already cited misses another point. Schultz's hypothesis, correctly understood, seeks to explain only the relative long-run income position of various farm areas. In a cross-section study which Sisler used or even over a limited time period, it can easily turn out to be a rather poor explanation. The crucial question is: If a windfall, say, irrigation facilities built with federal money, accrues to a farm area, would that area be able to hold the competitive gain thus acquired and maintain its relative income position over the long haul? Schultz thinks not unless the area happens to be favorably located in relation to some center of economic development. On this Schultz has the support of the Vanderbilt studies.

3. Another fault sometimes found in empirical work on agricultural poverty lies in improper interpretation of the statistical findings.

---

[7] D. G. Sisler, "Impact of Urban-Industrial Development on Agriculture," Journal of Farm Economics, December 1959, p. 1112.

[8] Douglass C. North, "Agriculture in Regional Economic Growth," Journal of Farm Economics, December 1959, p. 944.

We have just argued that cross-section studies are not the most suitable test of the hypothesis. To isolate the new problem let us suppose that they are acceptable. For the universe consisting of all U. S. counties, we accept, as indeed Sisler found in 1950 (r=0.4), some positive correlation between industrial-urban development and farm income. We now pick out on the basis of certain criteria a block of counties that turn out to be more or less alike with respect to the independent variable, industrial-urban development. The sample correlation coefficient of course drops toward zero. Elementary though this is, there are in the literature studies in which the authors attempted to "test" the hypothesis by means of such samples. This procedure is, of course, no test at all as it can negate any valid empirical proposition.

4. Schultz's hypothesis has also suffered from faulty empirical designs devised by others. Empirically, we may have no choice other than taking the markets as coextensive with some geographic unit for which there are data. The most commonly used unit appears to be the county. A number of problems may arise in this connection. Local industrial-urban centers may be located close to the county boundary. And metropolitan counties do generate forces that extend well into the neighboring counties, thereby raising the reorganizational ability of the farmers in the latter counties beyond what would be expected on the basis of their own local industrial-urban development. Finally, farmers in particular settings may not be dependent upon local markets. The first two problems concern the practical question of delineating the effective confines of relevant markets. While perfect solutions are out of the question, partial solutions, not always pursued, are clearly possible. The third problem raises an issue central to the hypothesis. Fortunately, as long as we are dealing with family farms, the problem need not be serious. However, under estate or plantation farming where the management has ready access to "central" money market and where labor, unlike that on family farms, is treated as a variable cost, Schultz's hypothesis may have little to do with agricultural organization and income.

5. It has been suggested, either by implication or explicitly, that the Schultzian hypothesis is pretentious since in a number of cases quite different explanations are apparently called for. The "alternative" explanations supplied are persuasive enough. The trouble is that they are often devoid of policy content. A few illustrations might be instructive. One explanation has it that the Great Plains states have been doing much better in terms of farm income than can be expected on the basis of their meager industrial-urban development because the rigor of the elements ruthlessly weeds out the weak and inefficient operators. Bankruptcy is more real and immediate there than, say, in the South where farmers, however small, somehow manage to eke out a living year after year. The explanation may be appealing but where is the policy content?

Take another example where "longtime" income trends among farm areas in Oklahoma have been found to be closely tied to the pattern of original settlement of the land. Again what policy implications do we draw from this? These are not alternatives to Schultz's hypothesis in a meaningful sense. The latter alone suggests a broad framework of action programs that are both feasible and capable of solving the resource and income problems of the depressed rural areas. Moreover, it matters not whether such problem areas are located in regions where empirical studies have thus far failed to turn up significant relationships implied by the hypothesis.

Migration versus Local Industrialization

As a variant of the general theory of occupational wage differential based upon disutility and capital costs of skill formation, a theory of regional wage would lead us to expect some differentials to persist even under equilibrium. This follows since migration, as with occupational changes, entails disutility consideration and a capital cost. However, unlike the problem of wage and employment among occupations whose policy consideration has been almost wholly limited to restructuring of labor supply, the same problem on a regional level is being accorded under today's anti-poverty programs alternative solutions bearing both on demand and supply. Retraining and education programs tend to act on the supply side while local industrialization programs for the depressed areas seek to influence demand. To be sure the preponderance is clearly in favor of the latter. The purpose of this section is to suggest relevant dimensions in support of this policy choice in addition to those that are frequently cited.[9]

In spite of the similarities between occupational and regional wage differentials, there is a fundamental difference which sets them apart and which lends substance to the anti-poverty programs. That is, regional wage differentials can be effectively removed if equilibrium is established through expansion of economic activities in the depressed areas instead of migration.[10] Of course, whether or not labor income equality can be attained among regions in this manner is subject to the market test of relative capital returns as between the depressed areas and the rest of the nation. We know that once externalities and complementarities are brought into consideration, relative capital scarcity in the depressed areas need no longer imply higher productivity. On such grounds Bowman concludes in her excellent study of East Kentucky that "To look to 'industrialization' . . . is obviously to look at a mirage. No such solution is in prospect (in East Kentucky)."[11] In a later passage, Bowman states even more forcefully (and unwarrantedly) that the region "will not develop a significantly expanding economy, no matter what public policies are pursued. In an area of this kind neither ARA nor any other program designed primarily to increase job opportunities can have significant effect."[12] In other words, under any reasonable productivity test East Kentucky must be written off as an area for investment whether private or public. Only under the loose benefact criteria might ARA and other similar programs be warranted. One might be tempted to dismiss this verdict at this juncture by simply remarking that the benefact principle is precisely what is at hand and that given sufficient resources there is no compelling reason why ARA cannot exert more than an insignificant effect on the area. Furthermore, the alleged abuse of having someone else pay for programs to revitalize depressed areas under the benefact principle is probably no abuse at all viewed in the light of Schultz's loss redistribution principle.

---

[9] See, for instance, a summary of these views in my Economic Development in the Southern Piedmont, 1860-1950, University of North Carolina Press, 1958, pp. 226-30.

[10] The ideal of equal labor income among areas assumes that psychic considerations arise not so much from differential positive preference for various places to live as they do from disutility incurred upon leaving one's familiar surroundings.

Nevertheless, economists would do well to rely as much as possible on market tests and, where departures are called for, to advance economic explanations for them. Unless this is done we may find ourselves with no choice but to appeal indiscriminately to the benefact principle for justification of ARA-type programs (which impinge on real resource use) as opposed to the alternative of income transfers. The woes pointed out by Bowman are common to all depressed rural areas. The difference is one of degree. On the one hand, these areas do not have the economic prerequisites to attract industries subject to agglomerative consideration. On the other, there are not enough footloose industries to go around.

The statement concerning footloose industries is all the more reasonable since, as we shall argue in the next section, they tend to be slow growth industries and since ARA precludes support for relocation of existing plants. Attempts to redirect new investment in these industries is likely to offer only ameliorative, not fundamental, solutions.

---

[11] Mary Jean Bowman and W. Warren Haynes, Resources and People in East Kentucky, Johns Hopkins Press, 1963, p. 159.

[12] Ibid., p. 266.

While a case can be made for departure from the market test on grounds of offsetting existing wage rigidity, the procedure as now practiced--mainly local industry subsidies--is subject to serious reservations. The latter issue will be taken up in a later section.

Agglomerative industries offer decidedly different prospects for the development of depressed areas. In the first place, as a group they contain good growth potential. In the second place, there are cogent reasons for departing from market productivity tests through subsidies in favor of the poor areas. Without trying to be exhaustive we shall mention two such reasons. The first has to do with two concepts, externalities and indivisibilities, that loom large in growth literature. Recognition of them gives rise to the possibility that whereas an area may fail the market test generally when applied on an individual project basis, it may easily meet the productivity test if planning is conceived in terms of an entire industrial complex. In a market-directed setting investment is, of course, evaluated and undertaken singly. In that light depressed rural areas must appear singularly unattractive to agglomerative industries. If industrialization is to be viable, it is probably necessary to proceed on the basis of new industrial complexes to be strategically located within or on the fringe of the depressed rural areas. To do this departure from strict market tests is essential. A second reason for such departure is that the practice of pricing public services on the basis of average cost tends to aggravate the tendency for big centers to become too large at the expense of small or potential centers of economic activities. (This proposition supposes U-shaped cost curves.) Although solid facts are hard to come by in this connection, it is probably plausible to argue that even if the development of new industrial complexes were to require subsidies such government outlays might be justified as a correction of a faulty price signal.

Although ARA's goal of bringing industries to the depressed areas is well founded, the program thus far is very much removed from the principle outlined above. Through April 30, 1963, the ARA had made commercial and industrial loans totaling $57 million in support of 168 projects and granted $46 million of public facilities loans and grants to 92 communities.[13] It seems clear that these efforts were too scattered to change fundamentally the resource and income posture of any of the recipient depressed areas. More important, even if the ARA had been given a freer access to the federal treasury, it is doubtful whether its implicit plan to industrialize virtually every county seat in the depressed rural areas could ever be a fruitful one. It may be mentioned in passing that by December 31, 1962, the number of counties designated as Section 5(b) areas (i. e., eligible rural and small urban depressed areas) totaled 657, encompassing a total population of nearly 12 million.[14] Almost two-thirds of the designated 5(b) areas were in the South. The argument underlying our proposition has been sketched thus far only in broad terms. A more detailed examination of the issues is presented in the following sections.

---

[13] Sar A. Levitan, Federal Aid to Depressed Areas, Johns Hopkins Press, 1964, pp. 114 and 150.

Prospects for Industrialization

ARA and Local Subsidies

In principle the ARA disqualifies communities whose development efforts involve subsidization of industries. In reality, the agency can guard against only the most overt type of subsidies, i. e., tax exemption. By enhancing the ability of recipient communities (or indeed requiring them) to grant less obvious concessions, ARA participation in local development programs tends to intensify competitive bidding for industries among depressed areas. In the first place, ARA loans to industries, at an interest rate that only the federal government with its unlimited power to tax can command, carry a maximum term of 25 years in amounts up to 65 percent of the total plant outlay and stipulate a mandatory community participation equal to 10 percent of the federal commitment. There is a further stipulation giving prior claim to the ARA loan. As Levitan puts it, the 10 percent community participation, practically speaking, amounts to a free contribution since amortization cannot begin until after the liquidation of the ARA loan is completed 25 years later.[15]

Second, both loans and grants are available to communities in the development of their public services. The provision is to use grants to cover that part of the cost of a project that is not self-liquidating in the light of anticipated revenue stream. The revenue stream in turn is to be estimated on the basis of some reasonable price. Needless to say, not all public services carry a price and even where they do the reasonableness of the price is subject to varying interpretations. The built-in incentive is for communities to understate the expected revenues, thus transferring the burden of subsidization to the ARA.

---

[14] _Ibid._, p. 85.
[15] _Ibid._, p. 104.

If the ARA participation has tended to intensify competitive subsidization by local communities, what can we say of the economics of local subsidies by depressed areas? Buchanan and Moes have argued that a critical reason why industries have not moved into the low-income areas in larger numbers is because institutional and legal standardization of wages has held the cost of labor in these areas considerably above the level that would have prevailed under competitive conditions.[16] On this basis, they built their case for local subsidization. Furthermore, viewing these subsidies as community investment, several studies indicate rates of returns that would stagger an economist's imagination. Moes considers an annual return of 6,000 percent conservative. At that rate, a community could earn "its investment back in less than a week."[17] More careful calculations by Rinehart from a sample of 22 cases of subsidies show annual rates of returns ranging from 70 percent to 3,595 percent even under the stringent assumption that the industries brought in are "fly-by-night" operations whose payrolls cease after one year.[18]

The economics of local subsidization as presented by Buchanan and Moes is open to challenge. First, the subsidization in question represents capital subsidies which while capable of influencing industry location serve to further distort relative factor prices in the low income communities. Second, the calculated returns are valid only from the community's standpoint. Hence, subsidization need not neutralize the distortion created by wage rigidity and result in "correct" location decisions, as argued by Buchanan and Moes. The reasons for this are easy to find. On the cost side, the community considers, not the totality of the resources committed to the operation of the enterprise in question, but only the subsidy outlay required to turn the location decision in the community's favor. On the return side, the community takes into account net income additions to local residents as generated directly and indirectly by the acquired enterprise. If the jobs thus created are in part manned by people who migrate to the community from outside, the loss in income to the other communities is left out of the calculations. If the case involves relocation of an existing firm, the distortion in this connection becomes even greater. Viewed in these lights it is clear that the subsidy game promises to be a profitable one for any community to play, poor or rich.

---

[16] J. M. Buchanan and J. E. Moes, "A Regional Countermeasure to National Wage Standardization," American Economic Review, June 1960, pp. 434-37. Also Moes, "The Subsidization of Industry by Local Communities in the South," Southern Economic Journal, October 1961, pp. 187-93.

[17] Ibid., p. 189.

[18] James R. Rinehart, "Rates of Return on Municipal Subsidies to Industry," Southern Economic Journal, April 1963, pp. 297-306.

If cut-throat competitive subsidization has not developed thus far among depressed areas, limitations in local funds and their inability to distribute the cost of subsidies in line with the incidence of gains were probably responsible for it. In the latter connection, shifts in local tax structure from property tax to sales and/or income tax could change the picture significantly. As for local resource limitations, ARA and other similar programs, if given greater scope and funds, could also alter the situation drastically.

One might be tempted to ask at this juncture: If industrialization of the depressed rural areas is acceptable as a principle and if ARA, taken in conjunction with local participation and subsidization, contributes to this end, then are these reservations really worth raising? They are for three reasons. First, there are better alternatives to capital subsidy if subsidization is to be validated on grounds invoked by Buchanan and Moes. Legalistic ramifications aside, a payroll subsidy, for instance, would be superior. Second, even if the development of depressed areas through industrialization is the end, it does not follow that it would be consistent with social interest for an uncoordinated and selective program to aggravate the tendency among competing depressed areas to pursue a "beggar-my-neighbor" policy. In this connection, classification of depressed areas to recognize the degree of depression, coupled with a scale of ARA subsidies graduated according to class to induce location in the generalized depressed area, would seem to merit some attention. The sense of this proposal is consistent with the generalized federal tax incentive program for industries locating in depressed areas as recommended by the Committee for Economic Development. A third reason is more fundamental and has to do with the prospects of achieving "lasting improvement" for the depressed areas if action programs continue to rely upon the instrumentality and initiatives of local action groups. It is to this question that we now turn our attention.

Location Decision, Tendency, and ARA

Ruttan and Wallace, in a survey study on location decision-making and industry affinity for concentration, found that the decision process of a firm consists of three distinct steps.[19] They involve, respectively, choice of a major geographic region, selection of a general area within the region, and determination of a specific site. The result of their investigation of 72 new firms in southern Indiana indicates that incentives offered by local communities were not at all effective at the first and second stages of the decision process.[20] The problem raised by this finding is basic to the success or failure of the ARA in terms of meeting the Congressional mandate of bringing "lasting improvement" to the generalized depressed area. If the Ruttan-Wallace verdict is essentially correct, then ARA's program being in essence a subsidization program operating through local groups may well have succeeded in influencing only particular locations within the generalized depressed area. What is crucial is to bring ARA's resources to bear on location decisions at the first and second stages. To do this ARA must divorce itself from the present reliance upon local action groups and declare eligibility for ARA subsidies to all industries if and when they locate in the generalized depressed area.[21]

---

[19] L. T. Wallace and V. W. Ruttan, "Area Development and Industrial Decentralization," a paper presented at the Annual Meetings of the Southern Economic Association, Memphis, Tennessee, November 10-11, 1961.

A related problem takes us back to our proposal for creating new industrial complexes within the area. As Ruttan and Wallace observed, the economics of location being what it is, the tendency is "for greater centralization of industrial activities within most Standard Metropolitan Areas." And those firms that moved into rural areas are not generally in the growth industries.[22] This finding coupled with the ARA exclusion of relocation activities makes the prospects for industrializing depressed rural areas look very bleak indeed. Quite clearly, "lasting improvement" in all depressed areas cannot be had via the present ARA program. This would be true even if ARA could effectively influence the location of the foot-loose industries in favor of areas under its care. A new approach is needed to redirect the investment of the expanding agglomerative industries. Such approach requires as a starting point planning for new centers of economic activity to be strategically placed within the generalized depressed area, rather than seeking to influence industry location one at a time.

---

[20] Ibid., pp. 20-21.

[21] Presumed knowledge of liberal ARA financing to firms seeking new locations need not detract from the statement, since ARA requires evidence of non-availability of commercial financing as a condition of eligibility--a matter that cannot be ascertained independently of the lending facilities of specific localities. Hence, subsidized ARA loans cannot be counted on at the first and second stages of location decisions.

[22] Ibid., pp. 22-23. See also H. B. Chenery, "Patterns of Industrial Growth," American Economic Review, September 1962, p. 368.

Summary and Conclusions

Given the social goal of revitalizing today's depressed rural areas, industrialization as the principal means used by the ARA seems to stand in good stead. It is consistent with Schultz's locational hypothesis which appears to have stood the test of time rather well. In line with the propositions that underlie the hypothesis its beneficial effects may be expected to spread to all sectors of the economy of the depressed areas, including the agricultural for which the ARA has no specific provisions. Redirection of new economic activities in favor of depressed areas, viewed as an alternative to out-migration, would also permit a closer approximation to the ideal of equal labor returns among areas without at the same time incurring psychic income loss (disutility) occasioned by population transfers. If redistribution of economic activities fails the market productivity test, compelling reasons for departure are available without appealing indiscriminately to benefact criteria. Average cost pricing of public services, wage standardization, and the need to recognize externalities and indivisibilities constitute a partial list of such reasons. If pushed hard, one may fall back on Schultz's principle of redistributing losses from economic growth. This principle, however, does not require programs impinging on real resource use such as the ARA. Simple income transfers will also suffice. On the other hand, the economic distinction is not perfect, as transfers do use up some real resources (for example, administrative personnel).

Probably few would want to quarrel with the general principle of redistributing economic activities in favor of depressed rural areas. What is crucial is the type of industrialization envisioned as well as the prospects for achieving "lasting improvement" under it. On this score, ARA's present program is in need of fundamental rethinking and reappraisal. The foot-loose industries amenable to local and ARA subsidization are not likely to be in a position to help ARA realize its implicit plan to industrialize virtually every county seat, both because of the poor growth potential of these industries and because of ARA's exclusion of relocating existing plants. If redistribution of economic activities is to succeed, ways must be found to influence the location of agglomerative industries. This is beyond the reach of ARA's present mode of operation. To influence industry location one at a time or to proceed on the basis of "integrated" plans as submitted by each local action group is certain to fail to bring about such a redistribution.

Planning for new industrial complexes to be strategically located within the generalized depressed area would seem to be the only way to produce an economic milieu conducive to redistributing agglomerative industry activity. This can and should be complemented by ARA's present program directed toward a broad diffusion of economic activity in all depressed areas. Within the latter framework, there is however a need for the ARA to rise above the level of serving as an instrument to intercommunity competition for industries among depressed areas. The point at which ARA support is granted is important. Unless offered at the decision level where firms are still considering broad areas for alternative locations, the ARA funds may simply serve to influence site choice in favor of a particular depressed area at the expense of some other depressed areas within the same general confines. The type of subsidies is relevant because of their influence on relative factor costs. Payroll subsidy would be preferable to capital subsidy. But this is more properly a matter for local action groups.

The scope and new direction suggested above for the ARA are undoubtedly beyond the resources and mandate of that agency. However, under the various anti-poverty programs that have appeared on the scene since the ARA,[23] the proposal may not be beyond the reach of their combined scope. The legal and administrative aspects of coordination among these programs are beyond the mandate of this paper. In this respect, the sense of the paper has been to analyze the economics of rural poverty, using the ARA as a point of departure.

---

[23] For example, the Accelerated Public Works Act of 1962, the Manpower Development and Training Act of 1962, the Economic Opportunity Act of 1964, and the Appalachia Act of 1965.

EFFECTS OF ADVANCING TECHNOLOGY AND CAPITAL INTENSIFICATION IN AGRICULTURE ON CHRONICALLY DEPRESSED RURAL AREAS

Paul R. Johnson
North Carolina State University

The tempting answer to the question posed by the title is simple--the chronically depressed areas suffer because someone else got the technology and capital. Such simplicity, however, would gloss over some real problems: Does the yardstick that shows some areas to be rural and poor also show some areas to be rural and not poor? Have these areas always been poor relative to other areas? If so, why? If not, why not? Will they continue to be relatively poor, and so on. Before one can consider these anything but simple questions, it will be necessary to make explicit the areas and their attributes that form the chronically depressed.

What Is the Chronically Depressed Area?

The implied position of current farm legislation is that all of agriculture is chronically depressed. This, obviously, is not the subject under discussion. However, it highlights a problem in identifying the spatial dimensions of rural poverty. Most of Appalachia is obviously an area of rural poverty, as is the cut over area of the Lakes region, the Indian reservations, and the Ozarks, but what else? In a discussion of this topic, a colleague suggests the Mississippi Delta as a chronically depressed area. A different impression of much of the Delta and Eastern North Carolina, for instance, is of quite well-to-do landlords and quite poor sharecroppers or farm laborers residing in spatial proximity. A starker example of this kind of income inequality but spatial equality is the migrant laborer on both coasts and his employer. The temporal aspect of the migrant labor relationship prevents its inclusion in any area consideration. No squalor exists in the area after the potatoes or lettuce are harvested, until the next year.[1] A good case, perhaps, can be made for considering all of "old South" agriculture in a spatial context, but initially I should like to consider the abstract problem of depressed agriculture, not depressed individuals.

---

[1] Since the migrant labor problem cannot be considered in this context, it should be made clear that the problems attendant on that agricultural phenomenon are not to be minimized by this omission. There are externalities in this process that make the social cost exceed the supply price of such labor. These costs cannot be examined here but deserve more scrutiny than they have received. Some of these externalities are of the same nature as those described later in this paper.

Let us then consider the problem of spatially concentrated rural depression. In our ordinary parlance this means that the incomes of individuals engaged in agriculture are low relative to some norm. There have been many studies of returns to the labor resource in agriculture. However, when considering depressed areas I think we have to distinguish between factor rewards and family welfare. By definition ("depressed") we are into welfare comparisons, where the only ground rules seem to be that we cannot say anything.

Two examples point up this distinction. One, a study by Lonnie Talbert, shows labor earnings in 1959 adjusted for education, age, etc., in agriculture in Arkansas and North Carolina to be higher than in Iowa and Indiana.[2] Yet, median incomes and surely family welfare are higher in the latter than the former. Simply by including asset holdings of farm families one could reverse the inference one draws from labor earnings.

The other example comes from some calculations I have roughed out and had in mind for some time. This is a comparison of a tobacco sharecropper in Eastern North Carolina with an urban worker drawing the minimum wage of $1.25 per hour for 40 hours for 50 weeks.

Consider a cropper leasing on 1/2 shares 4 acres of tobacco. (In a 1958 study the average per cropper family was 4.8 acres.) At 1800-2000 lbs./acre yield (significantly less than 1964 state average) the cropper gets a net income of between 1000 and 1400 dollars per year. In addition he gets a house and garden and probably a couple of hogs.[3]

Now consider an urban worker earning the minimum wage of $1.25 for the hours indicated above. He will gross $2500 per year. However, from this we have to subtract something between $540 and $720 a year for house rent (at a minimum) and approximately $150 for home produced food. If we include $100 for transportation for work purposes which are presumed 0 for the cropper, we have cut this urban worker to $1530 to compare to the $1400 we have given the cropper. We are now talking about a difference in the neighborhood of $100 rather than $1000 and note that tax provisions, greater acreage, urban unemployment and other factors could switch the numerical comparison completely in the rural direction. However, even with this, I cannot draw welfare implications.

---

[2] Lonnie Talbert, "A Study of the Extent of Labor Maladjustment and Differential Rates for Specified Areas and Size and Type of Farms, 1949-1959," unpublished Ph.D. dissertation, N. C. State, 1963. One can disagree with some of the methodology and numerical conclusions of this study, but the general hypothesis of no difference in labor earnings would seem to stand.

[3] These numbers are meant to be "conservative." The four acres could be too high, but the yields are probably low. The example is illustrative, not typical.

Simply to make the accounts complete we have to know the opportunity cost of unpaid family labor on the farm, labor force participation rates in town of the whole family, social security coverage of each, permanency of tenure in both kinds of employment and other values many of which can be calculated. But the main point seems clear. Family welfare is better judged by the resources it has available for consumption (in a permanent sense) than by income in a bookkeeping sense.

Professor Schultz makes the point that the "poverty line" is determined by the demand for services on the part of society.[4] The point here is related to that demand concept. Just as the family's consumption of services establishes its position relative to the "poverty line," the family's command over consumption should be a good indicator of its position relative to other families. Both of the families used as illustrations fall quite far down the relative income distribution by any standard. But is there any sense in which we can say one is worse off than the other?

Note that this kind of bookkeeping problem carries over into all of agriculture. There are obvious resource allocation implications, especially over time, when a farm family accepts a very low (or even negative) rent on both its capital and its labor, but that does not necessarily qualify the family for the county poor house.

Let us, then, adopt the view that there are farm families that are above the poverty line in the resources available for consumption even if those families are earning less than the opportunity cost on their assets. With this convention we can ignore nonfarm opportunities, and still find geographically concentrated rural poverty as measured within agriculture itself. Some areas have been mentioned. In addition, stretching out from the Appalachian region mentioned earlier we can find something like "hill country" southern agriculture, typified by the South Central Kentucky area to be discussed on this program, parts of Piedmont North and South Carolina, North Georgia, etc. Eastern Texas and Eastern Oklahoma are said to be characterized by this kind of low income, small family farm also. For some purposes we will want to include sharecroppers in plantation agriculture also. But here, even within agriculture the welfare comparisons may be tricky.

---

[4] T. W. Schultz, "Investing in Poor People: An Economist's View," unpublished paper in the Investment in Human Capital Series, 64:07, Rev. December 1, 1964.

Characteristics of Depressed Rural Areas

A rural area consists of two kinds of families, the rural farm and the rural nonfarm. The difference obviously is the occupation of the head, not residence. Much of Appalachian rural poverty is rural nonfarm stemming from a decline in coal mine employment. Other mining communities have or are experiencing the same problems. Some attributes associated with rural poverty are shared by both farm and nonfarm groups. Low educational levels, high median age, and lack of medical facilities are shared by both. On the other hand, race is not as clear cut a factor. Geographically concentrated unemployed miners are typically white.

A 1964 publication of the Economic Research Service, USDA, summarizes for the United States the attributes of rural poverty.[5] In a general manner (and to no one's surprise) a county with a low median income will have a large proportion of families with low educational attainment, an aged population, small asset holdings, and low labor force participation rates. If the county is in certain areas, non-whites (including Indians) will have a higher than proportional share of families in the lowest income groups.

With this background I think that given a specific example, more or less general agreement could be reached on whether or not an area was characterized by rural poverty. So let us turn to the question posed by the title--what are the effects of economic development on these areas?

How Did These Areas Get This Way?

In some contexts the question of how we got where we are is an idle question. If we endow area A and area B with identical assets (in value terms, not necessarily physical terms) initially, and productivity differences allow real income in area A to grow at a rate of 3 percent a year and real income in B to grow only at 2 1/2 percent; in 100 years the inexorable law of compound interest will make real income in A 1.6 times that of B. If we just want to say who is better off, we do not really care how they started.

---

[5] "Poverty in Rural Areas," Ag. Econ. Report No. 63, ERS, USDA, Nov., 1964.

On the other hand, if area B is twice as rich as area A initially and the growth rates are the same as before (3 percent and 2 1/2 percent), it will take approximately 135 years for area A to catch up with B. Thus, over some range of capital and growth rates there is a substitution between initial conditions and rates of change in a dynamical system.[6]

Consideration of this facet of economic growth highlights one problem of breaking into this process and drawing inferences.[7] If one looks at the five counties surrounding Glascow, Kentucky, (to be discussed at this workshop) and compares them to the five counties surrounding Atlanta, Georgia, today, one finds something entirely different than he would have found 100 years ago. Today he would find a depressed rural area and a thriving urban complex. Stretching the 100 years to make them both antebellum, unless I am badly mistaken, he would have found two "hill country" southern agricultural areas.

The difference in the two areas, it seems to me, is a combination of initial conditions and growth rates. When the establishment of Atlanta as a railroad center was accomplished, the initial conditions of a dynamic growth process were changed. The capital of the area was increased, a once for all change. Second, the rate of change in real income in the urban commercial center of Atlanta was greater than that in small farm agriculture, a continuing difference in growth rates.[8] Thus, two regions with similar natural endowments, no navigable water, few mineral resources, somewhat dissimilar population, though not as far as family type farming is concerned, and not grossly different climates experienced quite different growth patterns.

---

[6] Baumol treats this explicitly. See W. J. Baumol, Business Behavior, Value and Growth, Macmillan and Co., New York, 1959, pp. 137-139.

[7] It should be noted that specifying initial conditions typically would involve artificial dating and thus a breaking into the process also. I hope this process of starting in the past and looking forward to "today," or starting "today" and looking to the future is less arbitrary than comparing two "todays" at the same time point.

[8] I do not want to pin too much on this comparison, though casual historicism seems to confirm it. I especially do not want to use this as a basis for attributing too much to railroads. As Fogel has shown, railroads are not solely responsible for growth. I am comparing two small areas not seeking causes for economy wide growth. (See R. W. Fogel, Railroads and American Economic Growth, Johns Hopkins, Baltimore, 1964.)

It is interesting, and not without meaning for our main conclusions, that this comparative development process has been observed in reverse. Consider Virginia City, Nevada; Placerville, California, or any of several mining and lumber settlements in our history. These communities at the height of their boom were bigger (and probably richer) at that time than were many of the urban areas we cite as growth centers today.[9] Here the initial conditions were such that the natural endowment of one community was substantially larger than another but the rates of change were zero (or negative) in one case and positive in the other. The lesson of these communities is not that one can observe historical decline as well as growth. Rather, it is the nature of the decline that seems important for our own topic.

The factor that appears to distinguish between lumber communities, some mining communities, (and probably some oil exploration communities) and farming communities is one of expectations. In lumber and some mining areas the stock of an exhaustible resource was known. The expected life of an activity could be judged with some accuracy. The very nature of the community was different. It was not a family oriented community. One would not expect to find brick school houses or libraries in the gold fields. Even if knowledge in these areas was not perfect, there was apparently a high enough weight placed on uncertainty that fixed costs were kept low or rapidly depreciated both for private investment and for social overhead investment.

Consider, on the other hand, a traditional farming community. Here investments might be made in barns and homesteads with 50-year life expectancies. Even erosion prone soil might last a generation. This kind of commitment in nonhuman capital incorporated a geographical and occupational fixity of the human resource. Looking backward one can infer that the expectations of the settlers were highly skewed toward permanency, and mistakes in predictions would be exceedingly costly.

The major effect of this commitment in occupation as well as nonhuman assets was on the inter-generation allocation of resources. An investment in family assets whose life is longer than one generation imposes nonpecuniary as well as pecuniary losses on the subsequent generation if an error has been made.

---

[9] For reasons to be mentioned in the text, the mining communities cited here are not of the same order as Appalachian mining communities, or other currently distressed areas, including some in the West.

One cannot really distinguish poverty on the basis of who made the errors. The capital losses on privately held assets and the investments in skills, suffered by coal miners, small farmers, and sharecroppers, are all the result of committing too many resources to activities where demand conditions and technological innovation would turn the price ratios against the labor input.

A point easily lost sight of is the relative recentness of the commitment of this human and nonhuman capital. The Southern Appalachian coal miners are not all descendants of Daniel Boone. Until 1930 there was migration into the mountains. After 1900 most of this was mobile labor seeking employment in expanding coal fields. Population growth in this area is not ascribable to subsistence farming. In fact, subsistence farming may have been on the decline before 1920.[10]

We are left with the general statement that time rates of change of economic variables can vary spatially, and both the level and rate of economic activity in an area are thus affected. Operationally, this is an empty hypothesis. However, investigation into the time rates of change of the recent past should help explain the future.

What Is the Status of These Regions Today?

Clearly, it is obvious to the most casual observer that there is a great disparity in wealth (and income) among rural areas in the United States. The characteristics of the low income areas have already been outlined; we must now examine the contrasts between the two kinds of areas.

Regardless of how it came about, certain areas have a clear comparative advantage in the production of certain agricultural products. Despite some limitations in method, the Heady-Egbert studies highlight these contrasts.[11]

---

[10] For the East Kentucky experience see M. J. Bowman and W. W. Haynes, Resources and People in East Kentucky, Johns Hopkins, Baltimore, 1963. The East Kentucky experience may not generalize to all of Southern Appalachia, but the recentness of the error in expectations does.

[11] See for instance, A. C. Egbert and E. O. Heady, "Regional Analysis of Production Adjustments in the Major Field Crops, Historical and Perspective," Tech. Bull. No. 1294, ERS, USDA, 1963.

Given the current state of arts, Appalachia is not going to compete with the Plains states in grain production, nor with the mid-West in grain, meat and milk production. There might be a possibility of competition with other areas in certain specialty agricultural products, such as fruits, poultry products, etc. But, even such opportunities should be given careful scrutiny, and comparison with nonfarm alternatives.

The Piedmont areas of the South are no longer competitive with the Delta and the Southwest in cotton production, and the continuous underplanting of allotments in those areas confirms this fact.

The comparative disadvantage of some of these areas might be true even without the obvious economies of size that are involved. Consider the initiation of a commercial agricultural enterprise of a viable size. (This could include the enlargement of existing enterprises.) Where should it be located? If there are no regional differences in interest rates, then the cost differences associated with areas are going to be those of transportation to the product market or from the factor markets. The main point here is that modern communications and transportation continue to compress the size of the United States. Overcoming distance has to be measured in money terms not linear distances. Following a prolonged drought, a severe depression, and a war, Great Plains agriculture is probably a good example of an area not dependent on local markets for adjustments. In a sense, being 500 miles from Kansas City is no further today than being 50 miles was 50 years ago. Being 50 miles from an urban center via poor mountain roads is in the same sense further than being 100 miles via Interstate Highway.

Even more damaging, perhaps, to the comparative advantage of most poor rural areas are the external economies available to the current operators in better off agricultural areas. Animal feeders in the mid-West have available all the specialized services to accompany the production and marketing of their products. Some of these economies are achieved through the centralization of economic activity.[12] Some are achieved through public expenditures on research, extension, market information, etc.[13]

---

[12] This implicit part of the Schultzian location hypothesis obviously is valid for a stable or declining industry when the demand for the product is not calling for increased production.

[13] There is a micro-argument that in certain instances an integrated enterprise could internalize certain external economies and thus find a lower marginal cost function if one factor, e.g., labor, was cheaper in a new location. The shifting location of poultry enterprises is often cited as an example. The conditions for this to be true require so many spatial and temporal restrictions it cannot be discussed here.

Thus, even if the same economies of size can be taken advantage of, the cost of acquiring new techniques is the same, the same managerial skills are available, the equivalent labor is employed, it is not obvious that now depressed rural areas could compete in existing agricultural activity. For some products they could even find transportation advantages and still have the external economies that fall to the firms with a previous locational advantage to overcome.

The examination of where we are now leads back to the question of how we got there. In hindsight, committing family assets to small scale agriculture and coal mining involved a long-run mistake in expectations, regardless of what it was in the short run. The decline in both asset values and opportunity costs imposed private losses on individuals in the areas where these activities are concentrated.

Since the pull of a tight labor market in World War II, there has been no overall policy for overcoming the income effects attendant on the decline in labor and capital income in these areas. Even if the prior generations had not committed future generations to geographic and occupational fixity, we would find a distressed situation. Subsistence farmers might not realize for themselves, much less their children, enough for their assets to pay for an occupational shift. The opportunity cost of coal miners has fallen to the point where for certain age groups expected returns fall short of the costs of occupational shifts. In both cases the income effect to the individual is part of an aggregate effect on the community that keeps the investment in the children in the area below the level necessary for them to overcome the poverty line.

If we now come back and include the sharecroppers, a similar phenomenon is observed. They are more akin to the coal miners than the subsistence farmers in that their assets are almost nil if not zero. Yet, we find that low as the nonfarm opportunity cost is the price ratio continues to favor capital in agriculture.[14]

---

[14] There are obvious discontinuities and imperfections present in the short run in this phenomenon. One example suffices. In North Carolina cotton culture the price of "modern" cotton pickers clearly calls for a substitution of mechanization for labor. If sharecroppers are thus displaced, one has to substitute herbicides for hand choppers. The mechanical pickers can displace $1.00 an hour picker labor, and at the same time displace $.50 an hour chopping labor. The short-run proportions thus consign to rural nonfarm or urban poverty persons whose comparative advantage, low as it is, may lie in agriculture.

What Do These Areas Do Now?

If we could say here what these areas can do to overcome their relative disadvantage we could dispense with a whole raft of legislation and attendant bureaucratic expenditure. Even though that cannot be done we should say something about what inferences one can draw about the future from what has been said about the past and present.

A few things about the future are fairly clear. If no exogenous forces are introduced, the relative position of these areas will deteriorate further. Their comparative advantage is not in agriculture and the failure to invest in the labor force through basic education, specific job training, or increased migration will mean no increase in labor returns, and relative to other workers this will mean a decrease in real returns. For specific cases the question is still moot as to whether the people should move to jobs or the jobs should move to people, and some of both is taking place. What is important is that either route requires investment in the people, and either route means leaving agriculture for a substantial number.

The real problems are bound up with how the adjustment is accomplished. If no further action is taken, the regions will continue to lose population. The absolute number of low educated persons will decline, and the age distribution will become more skewed to the older ages.

If a policy of encouraging migration out is pursued, the adjustment process will be speeded up but both gains and losses will be imposed on those who remain. We do not have enough information to predict accurately what the net balance would be and who would gain or lose.

If a policy of moving jobs in is pursued, gains will be made by those in the area, but at the expense of other areas.

The current opportunity cost of the labor in these areas is very low. The opportunity cost of the children in these areas will also be low unless the investments are made in them now. If the parents are at the age and skill level where the discounted future returns from training and/or moving will not cover the costs of the training, our allocative criteria would indicate that training and/or moving will not pay. However, if the effect of having communities marked by this low skill-low income characteristic is to keep the level of investment in children below the discounted future returns (both private and social) of such training, then our allocative criteria fail to provide the optimal allocation.

We are confronted then with a redistribution problem as well as a resource allocation problem. If private resources in an area are too low to yield the income necessary to achieve the inter-temporal allocation that the rest of the economy is achieving, some kind of redistribution is in order.

Summary and Conclusions

The question of what is a chronically depressed rural area has not really been answered here. Relative to average income, much of agriculture qualifies. Judged by the opportunity cost of labor much of low income agriculture does not qualify. We appear to need a better welfare indicator to identify both rural and urban poverty.

A distinction should be made between rural farm and rural nonfarm labor force. Poverty areas containing each share some of the same characteristics, but the causes may be different, as may be the solutions.

Simply looking at two regions and saying one is poor and one is rich does not get at the problem of narrowing the gap between them. We need to know the rates at which the relevant variables are changing in each.

Regardless of how income disparities came about, the currently depressed rural areas do not appear to be able to compete in agriculture with existing techniques. Even if they overcome some of the environmental conditions they are confronted with, they would have to face the existence of external economies in traditional locations.

As growth through agriculture is unlikely, society faces a redistribution as well as a reallocation problem in coping with depressed rural areas.

EFFECTS OF ADVANCING TECHNOLOGY AND CAPITAL INTENSIFICATION IN NONFARM INDUSTRY IN DEPRESSED RURAL AREAS

Edward K. Smith*
Boston College

Given their nature, the effects of technology and capital intensification must be widespread and numerous. If these effects end up raising the general level of life, we have the problem of assessing how much each has contributed to the growth in income over time, a task which has been undertaken by some brave souls and bright minds with some success at the national level. But if we wish to assess the effects of these most important elements in economic growth on the living standards, employment, income (or most any other variable) on a particular sector or area of the economy, we are faced with very difficult, if not insurmountable problems of identification and measurement.

This is not to say we cannot say anything about how capital changes in an industry or particular technological advances in a sector or place have affected the lives or economies of the people and places involved. Economic history is replete with examples of where we might start (if we have not already done so) to gather cases to illustrate these effects.

Two studies undertaken under the Area Redevelopment Administration auspices illustrate this. One, a study of the employment and income impacts of economic development projects in rural areas by the Economic Research Service, U. S. Department of Agriculture, and the other, a study being undertaken at Columbia University to test whether and to what extent technological change is related to depressed areas, are nearing completion. Measurements of this sort are difficult for so many factors are at work in the process of development and their interrelations are necessarily complex, whether we are measuring some force, e. g. technology, or some event, e. g. a new plant.

---

*I am indebted to Mr. George Brooker of Boston College for assistance and to Gerald Kraft, Allan Willens, and John Kaler of Charles River Associates, Cambridge, for advice and use of CCDB tapes.

Measuring the effects of capital intensification and technological change on a group's employment opportunities, especially if the group is nonhomogeneous and spread throughout the economy is a most difficult task at best. If we want to consider the effects on the group in particular areas, say depressed rural areas, we have to be even more specific and our problems of measurement increase. Area identification problems arise immediately, and even more difficult ones follow.

I hope to be able to speculate fruitfully on the effect of capital intensification and technology on depressed rural areas despite the complexity of the task. Not by overcoming the complexity, for I would hope this could be attacked by a dose of time and funds not at my command, but by narrowing my view to a selected number of counties in the South which are designated as depressed rural counties by the Area Redevelopment Administration, and attempting to assess some of the factors which capital and technology appear to play in them as well as to speculate on the roles other factors may play in their development.

Some Generalizations

First we might observe that we would not be so interested in capital intensification and technology on rural areas if it were not for the fact that the technology of the farm has changed so dramatically that in the last two decades the annual rate of migration from farming has been 3.5 percent of the farm population, over 7 million persons having left farming in the period 1950-1958 alone.[1] And since 1929 agricultural employment has been nearly cut in half while nonagricultural employment has increased about 70 percent. Output per man-hour increases in agriculture have been far greater than those in the nonagricultural industries.[2] The result, in the face of demand for farm products inadequate to sustain the large numbers of persons on farms, has been for technology and capital to create a force pushing people off the farm, while the technology and capital increases in the nonfarm sector, in the wake of increasing per capita demands for nonfarm goods and services, has served to pull people into nonfarm employment. This process has been going on since industrialization began, but it has been most dramatic in the last twenty years.

---

[1] Committee for Economic Development, An Adaptive Program for Agriculture, (New York, 1962) Table 2, p. 62.

[2] The indexes of output per man-hour in agriculture rose from 50.2 in 1947 to 134.4 in 1964 while that of nonagricultural industry rose from 76.3 to 118.3 over the same period (1957-59 = 100).

Those who would ask for an adaptive program for agriculture are asking agriculture to do what it has been doing for a long time, only they want to speed it up. This would involve some 400,000 to 500,000 additional workers per year leaving agriculture which is less than one percent of the nonfarm labor force, but alarmingly, would add about 40 percent to the predicted new entrants to the nonfarm labor force.[3] And if our experience of the last few years is any indication, even in an economy which has experienced the longest prosperity on record, placing the 1 3/4 to 2 million new entrants to the labor force (including farm migrants) is no easy task. So our interest has to be that of creating a high level of demand which will allow the farm migrants entry to nonfarm employment, whether it be in urban or rural areas. If it is or can be the latter, this implies a migration of capital, with its embodied technology, to the rural farm and nonfarm areas. And if capital is sufficient but skills to use the capital lacking, then education and retraining are vital to the adaptive process.

Complicating both the pushes and pulls of technology, capital, and farm product demand are the forces of human fertility, discrimination, land ownership and the quality of farm life itself. It has been estimated that the rural population would have risen by about 11 million persons in the 1950's were it not for the out-migration to the cities.[4] Tenant farms, usually small and with low assets, are especially likely to go out of operation. Some 1.6 million disappeared from 1940 to 1959, most of them (1.1 million) in the South.[5] A large number of these were, of course, Negro operated.

In addition, the rural population has a larger proportion of children under 15, and in the 15-19 age group, while there is a relative shortage in the 20-44 year old group.[6] The small towns in rural areas have a larger proportion of older persons (1 in 8 over 65 years) and relatively fewer of working age population than cities.[7] In the South the dependency ratios (per thousand) for persons under age 18 and over age 65 were for farm population 975, for nonfarm population 938 and for urban population 789. The comparable figures for the United States were 943, 920 and 771, respectively.[8]

---

[3] Ibid., p. 59.

[4] Conrad Taeuber, "Rural Americans and the Rest of Us," A Place to Live, Yearbook of Agriculture, 1963, p. 14.

[5] Manpower Report of the President, 1964 (Washington, 1964) p. 80.

[6] Taeuber, op. cit., p. 15.

[7] Ibid.

[8] Manpower Report, op. cit., p. 81, Table 22.

The young, of course, are moving both off the farm and out of rural areas. Between 50 and 55 percent of rural youth between 10 and 17 years old moved from West Virginia to non-rural areas in the 1950 decade. In Mississippi the migration rate was about the same, though it was higher (60 percent) among Negroes.[9] Migrants from the Mississippi Delta tended to move to metropolitan areas of the Midwest, while Cornbelt migrants favored their own region as a destination, nearly half staying in their home states.[10] A study by the Department of Agriculture and Oklahoma State University to be published by the Area Redevelopment Administration will present much more detail on migration by county by sex, age and color and give to researchers a valuable tool to further analyze these changes.[11]

Negro mobility is quite different in the South than in the North. It is much higher in the South, where only 1 in 4 are currently living in the area of their birth contrasted to 1 in 2 for the United States as a whole.[12] Fifty-six percent of Negro family heads born in the South who once lived on farms are now living in metropolitan areas. For Negroes born elsewhere the percentage is 18.[13] Recent mobility of the Negro has slowed vis-a-vis whites, for since 1950 the proportion of white family heads who have moved has been twice that of Negroes, and the difference is increasing.[14] White families also have a larger number of moves and engage in more long-distance commuting than Negro families.[15] Furthermore, a disposition to move in the future was found less frequently among Negroes than among white people, and this difference was even greater for Southern Negroes.[16] The lower educational levels and skill levels of jobs held by Negroes serves to reduce their mobility, and Negroes seem to have stronger emotional ties to family and place of residence than the white population.[17] But unemployed Negroes appear to have nearly the same mobility rates as the white unemployed.[18] Thus here the pull of economic incentive, or the push of lack of opportunity is evident. On the other hand, there is some evidence that people in very low income areas have lower gross out-migration rates than people in high income counties, and that the low level of opportunity after 1950 did not do much to stimulate out-migration.[19] In general, "residents of redevelopment areas tend to have those characteristics associated with a low rate of mobility"[20] so that "it seems reasonable to infer that a high mobility rate among people over 35 with a low level of education can be achieved only by some form of strong pressure."[21] Migration of the young and better educated leaves behind the least adaptable population. The social capital invested in the young is taken with them, from the relatively poorer sections of the country to the richer.[22] All the forces at work appear, at least in the recent past, to make it increasingly more difficult for the depressed areas labor force to adjust to an economy characterized by the deepening of capital and the advance of technology.

---

[9] Ibid., p. 82.

[10] Ibid., p. 83.

[11] The tentative title is Composition of Net Migration by Counties, Economic Research Service, USDA and Area Redevelopment Administration.

[12] Negro-White Differences in Geographic Mobility, Area Redevelopment Administration, (Washington, 1964) p. 5.

[13] Ibid., p. 7.

[14] Ibid., p. 8.

[15] Ibid.

[16] Ibid., p. 11.

[17] Ibid., p. 15.

[18] Ibid., p. 20.

Rural Labor Force

The decline in farm population and farm workers has been partly offset by a rise in rural nonfarm work so that from 1950 to 1960 the net decline in rural residents was 0.6 million.[23]

Between 1950 and 1960 the urban male labor force increased by 18 percent while the rural nonfarm force increased by 22 percent as the rural farm force decreased by 44 percent. For females, the comparable figures were 36 percent, 57 percent and 14 percent; as shown in Table 1.

The rural areas are able to pick up employment in the nonfarm sector but it is the women who show the best ability to find jobs in the rural areas having increased the labor force by 1,244,000 while males decreased it by 1,355,000 for rural farm and nonfarm areas together.

---

[19] Migration into and out of Depressed Areas, Area Redevelopment Administration, (Washington, 1964) p. 8. Sampling errors may make the first conclusion less likely. Also, the lack of good unemployment information in low income areas may bias the conclusion.

[20] The Geographic Mobility of Labor, Area Redevelopment Administration, (Washington, 1964) p. 28.

[21] Ibid., p. 31.

[22] Professor Schultz will have his say on this. For my part it is an excellent argument for federal aid for education.

[23] Manpower Report, 1964, op. cit., p. 83.

Table 1. Urban and rural civilian labor force, by sex, 1950 and 1960 (in thousands)

Labor force	1950	1960	Percent change
		Male	
Urban	27,494	32,486	18.2
Rural nonfarm	7,750	9,461	22.1
Rural farm	6,882	3,816	-44.5
		Female	
Urban	12,829	17,447	35.9
Rural nonfarm	2,493	3,905	56.6
Rural farm	1,198	1,030	-14.1

Source: Manpower Report of the President, 1964.

The extent of the opportunities for female employment may vary widely among areas and influences their participation rate accordingly. A study by Segal and Freeman for ARA has shown this for depressed urban areas.[24] The relationship has a time dimension which suggests that if the industrial composition of an area is favorable to female employment, women will tend to stay in the labor force even after their relative opportunities diminish. Thus the rural areas might well see an increase in female labor force participation persist even after the original stimuli have diminished. We need to explore the labor force participation patterns in the rural nonfarm areas in particular. The labor force in these areas might well be more adaptable than we think, and the kind of training programs we establish in these areas should take such findings into account.

It is also of interest to note that in 1960, 12 percent of rural farm residents were employed in manufacturing as contrasted to 9.4 percent a decade earlier. The proportion of rural nonfarm employment in manufacturing differed little from urban areas in 1960, having risen from its

---

[24] Population, Labor Force and Unemployment in Chronically Depressed Areas, Area Redevelopment Administration, (Washington, 1964) pp. 25 ff.

1950 level of 25.6 percent to 28.6 percent.[25] The presence of some urbanized areas within the rural areas providing the jobs is indicated. We will return to this point later.

Keyserling in commenting on this whole process of the shift out of agriculture believes it reasonable to assume "that at least one-third and perhaps one-half of the total U. S. excess unemployment in 1964 was due to the movement of farm people into the nonfarm economy."[26] His excess unemployment is that above the level compatible with maximum employment, and includes an estimate of full-time equivalent of part-time unemployment and concealed unemployment on the part of those who do not seek work because of the lack of job opportunities. Thus his "true" level of unemployment rose from 3.2 million in 1953 to 6.3 million in 1964, and excess unemployment from 0.5 million to 3.3 million. The cumulative withdrawal of workers from the farm labor force over the period thus equalled about 91 percent of the "excess" unemployment in 1964, which Keyserling reduces from one-third to one-half in taking account of labor force withdrawals, retirements and deaths.[27] However we might take issue with the exactitude of such a measure, Keyserling's estimate indicates the large pressures which are put upon the nonfarm sector to absorb the wave of agricultural outmigration if we are to attain a full employment economy. The great difficulties facing redevelopment authorities in accommodating a substantial proportion of this massive adjustment within the redevelopment areas themselves is obvious. We could use some carefully researched estimates on the costs of such programs assuming differing levels of absorption of farm labor in nonfarm employment, at regional levels.

Depressed Rural Areas

Upon the passage of the Area Redevelopment Act in 1961 the administrators had as their first major task the delineation of the areas which were to be the beneficiaries of the program. The Act (Public Law 87-27) was quite specific in defining the larger urban areas, for unemployment rates were to be the major test and such rates have been regularly reported for all large labor market areas. Such areas came under Section 5(a) of the Act. For areas which could not be evaluated on unemployment criteria, Section 5(b) of the Act gave fairly broad authority to designate areas which did not meet the criteria of Section 5(a) but allowed the Secretary of Commerce to prescribe standards of designation based on unemployment, underemployment and income, including low income farm families in rural areas, among other factors. Various 5(b) designations were set up including three which specifically applied to rural areas. One of these, the 5(b)2 areas were to be designated areas of low farm income where the median farm family income was $1,415 or less, based on the 1960 Census of Population. This level of designation was chosen based on the experience prevailing in 1950 for the 1960 data were then not available, and the counties which were designated 5(b)2 in August 1961 were predicted to fall within the specified income level. A total of 129 5(b)2 areas were designated. Many of these areas were designated on other criteria also, especially that of low family income.

---

[25] Manpower Report, op. cit., p. 85.

[26] Leon H. Keyserling, Agriculture and the Public Interest, Conference on Economic Progress, (Washington, 1965) p. 25.

[27] Ibid.

As it turned out, a substantial number of the designated areas were not really eligible under the regulations once the 1960 Census of Population information became available. Quite a few of the counties were found to have had income increases which were twice the 5(b)2 designation level. I believe the designation levels were set at too severe a cut-off point anyway, especially in view of the fact that the most of them were in the lowest 20 percent of farm family income.[28] The areas, of course, remained in the ARA program.

I have chosen the 5(b)2 areas for study primarily because they are for the most part low income and low farm family income areas not only in 1950 but also in 1960--low in the sense of being in the lowest quartile more than "low" by an administrative regulation.

They are, moreover, the counties with which a frankly experimental program has had to contend. They are the "depressed rural areas" of the Area Redevelopment program and as such are the ones which one group has been given responsibility for. If they are anything, they are official. Research now being undertaken by a group under the direction of John Meyer of Harvard University is reviewing the designation of the areas applying discriminant analysis. We might find some changes in what is called a depressed rural area. In any event, I doubt if a working majority of ARA's critics would ever agree on designation systems anyway, rural or otherwise. Furthermore, in order to give greater homogeneity to my review I have chosen to analyze only those

---

[28] For a summary of these data see Median Family Income, Statistical Bulletin No. 339, Economic Research Service, U. S. Department of Agriculture, (Washington, 1964).

5(b)2 areas designated in Alabama, Georgia, Mississippi and South Carolina, a total of 105 counties, eliminating 24 counties scattered among nine other states.

These 105 counties display a variety of attributes which for the most part reflect their lagging economic development, but there are exceptions to all tendencies and we find them among this group.

These are rural areas, having about 20 percent urban residents, though two of the areas had over 75 percent urban. Most of the areas were heavily non-white, and had a larger percentage of persons aged 65 and over than the United States as a whole, while the median age was lower than the U. S. median, without exception. In the United States 21.4 percent of families had incomes less than $3,000 in 1959; the 5(b)2 areas had about 60 percent and in the 105 counties chosen the percentage is slightly higher. Needless to say, the percentage of families with incomes over $10,000 was less than a quarter of the U. S. proportion (15.1 percent). Many of the 105 counties had less than 2 percent of the families with incomes below this level. Education levels were low. Over 25 percent of the population over 25 years completed less than five years of school. About 27 percent of the workers were white collar, in contrast to the 41 percent in the United States.

All but three of the 105 counties lost population by migration over the decade of the fifties. The outflow exceeded the employed labor force in over half the counties and nearly equalled it in a good many others. If we assume that for every four migrants one must be in the labor force (the ratio of people per employed worker in the South was 2.95:1 in 1960), we can see that a job deficit of significant proportions existed. This is reflected in the decreases in the civilian labor force in the four-state depressed rural areas from 1950 to 1960. Eighty-four of the 105 areas showed labor force declines, but at the same time 85 had increases in manufacturing employment. Three out of four of the counties which had increases in manufacturing employment nevertheless experienced declines in their labor force, while one in four increased their labor force. But no county which had a decline in manufacturing employment had an increase in its total labor force. It often took a substantial percentage increase in manufacturing employment to bring a positive change in the civilian labor force or to keep the decline in labor force small. In Mississippi where 34 of the 35 counties had increases in manufacturing employment only four had increases in their labor force. The typical decrease was over 15 percent, while increases in manufacturing were over 50 percent in many cases and over 100 percent in quite a few. Georgia, on the other hand, had 12 of its 30 counties with positive manufacturing employment changes increase their labor force over the decade. Again it took an appreciable change in manufacturing to accompany a positive change in the labor force,

Table 2. Number of rural depressed areas showing changes in manufacturing employment and civilian labor force, 1950 to 1960

State	Increases in Mfg.		Decreases in Mfg.	
	Civilian labor force up	Civilian labor force down	Civilian labor force up	Civilian labor force down
Alabama	2	10	0	6
Georgia	11(1)	14(4)	0	10
Mississippi	3(1)	24(6)	0	1
South Carolina	3	6	0	3
	19(2)	54(10)	0	20

Note: Counties in parentheses had manufacturing employment base of less than 200.

Source: Bureau of Census, CCDB and Statistical Profiles, ARA.

with two notable exceptions, Baldwin and Dougherty. The latter contains Albany, Georgia, and it turned itself into a small SMSA over the period under review. Both had in-migration.[29]

These observations suggest to me the importance of attempting to measure the multiplier effects of manufacturing employment on small areas. The depressed rural areas are gaining manufacturing jobs but their local multipliers appear small. The extent to which they have to combat the decline in agricultural employment is indicated in Table 3. While manufacturing employment increased 35 percent for the four-state 5(b)2 areas over the period 1950-60, employment in agriculture decreased 52 percent. All other jobs increased 24 percent. Total employment fell by 79,000 as agricultural jobs fell by nearly 185,000. Manufacturing employment rose by over 35,000 and all other jobs increased by 70,000.

---

[29] In any event, the classification of Dougherty as a depressed rural area is inaccurate. A logical question is: Should it be kept in the program as a nodal point of development?

Table 3. Employment in Alabama, Georgia, Mississippi and South Carolina 5(6) areas, 1960 and 1950

State	Total employment		Manufacturing		Agriculture		All other		Percentage change 1950-1960			
	1960	1950	1960	1950	1960	1950	1960	1950	Total	Manufacturing	Agriculture	All other
Alabama	123,948	149,927	29,841	24,790	27,477	66,686	66,630	58,451	-17.3	20.4	-58.8	14.0
Georgia	181,226	190,740	42,066	31,880	33,397	77,277	105,763	81,583	- 5.0	32.0	-56.8	29.6
Mississippi	243,122	289,938	33,173	20,268	84,501	163,781	125,448	105,889	-16.2	63.7	-51.6	18.5
South Carolina	113,505	110,394	30,432	23,058	21,953	44,338	61,120	42,998	2.8	32.0	-50.5	42.1
Total	661,801	740,999	135,512	99,996	167,328	352,082	358,961	288,921	-10.7	35.5	-52.5	24.2

Source: City County Data Book, 1960 Census.

If, then, two non-manufacturing jobs accompanied one manufacturing job, more than 26,000 jobs in manufacturing, over and above the 35,000 created during the decade, would have been necessary to offset the agricultural decline in the 105 county area. While percentage declines in agriculture were not much different among the four states' rural areas, the growth in manufacturing employment was largest in the Mississippi areas while all other industry groups grew least in Alabama and most in Georgia.

Also of interest is the growth in employment in the metropolitan areas of the four states (Table 4).

Table 4. Employment in Alabama, Georgia, Mississippi and South Carolina, SMSA's, 1960 and 1950

State	Total employment		Manufacturing		Agriculture	
	1960	1950	1960	1950	1960	1950
Alabama	499,842	433,701	121,936	102,945	12,993	27,501
Georgia	650,527	487,380	146,010	105,619	8,370	12,902
Mississippi	70,705	56,788	10,049	7,133	3,364	6,934
South Carolina	255,681	189,869	70,169	52,198	8,326	15,454
Total	1,476,755	1,167,738	348,164	267,895	33,053	62,791

State	All other		Percentage change 1950-1960			
	1960	1950	Total	Manufacturing	Agriculture	All other
Alabama	364,913	303,255	15.3	18.4	-52.8	20.3
Georgia	496,147	368,859	33.5	38.2	-35.1	34.5
Mississippi	57,292	42,721	24.5	40.9	-51.5	34.1
South Carolina	177,186	122,217	34.7	34.4	-46.1	50.0
Total	1,095,538	837,052	26.5	30.0	-47.4	30.9

Source: City and County Data Book, 1960 Census.

Total employment rose 309,000 or 26 percent above 1950 levels. Manufacturing jobs increased 30 percent and all other nonagricultural employment increased 31 percent. The decline of nearly 30,000 agricultural jobs was offset by increases of over 80,000 in manufacturing and over 258,000 in all other nonagricultural jobs, a ratio of 3.2 nonmanufacturing nonagricultural jobs to one manufacturing job. The opportunities for expansion in the urban areas, especially in the nonmanufacturing sector, as an offset to agricultural decline both within and outside the urban areas are evident. It is of interest to note also that however much we might be inclined to lament the lag of the depressed rural areas, they nonetheless gained nearly 45 percent as many manufacturing jobs as their urban neighbors. Furthermore, manufacturing employment relative to total employment is now not much different in the depressed rural areas than in the metropolitan areas of the four southern states, whereas it was a significantly lower proportion in 1950. Table 5 illustrates these proportions for the years 1950 and 1960. The depressed rural areas are in a sense unbalanced more on the non-manufacturing side than manufacturing. This is due more to the trading and service nature of much urban employment which are, of course, rapidly growing sectors while manufacturing is slowing relative to the tertiary sector, as it is in the nation at large. As the urban South becomes more like the urban everywhere, the rural South becomes more like the urban South. The redistributive effects on employment and income which have been taking place are certainly making regions of the United States more alike. The industrial structures of the states are increasing in similarity as the migration from agriculture continues. A recent article by Ashby points up that the decline in specialization in the Southeast was the largest of the eight census regions.[30] Graham, also employing the shift technique, has illustrated the same kind of homogenization for income.[31] The work on employment shifts is continuing under Graham and Ashby in the Office of Business Economics, much of its original support having come from the ARA research program. Edgar Dunn, now at Resources for the Future, set up the program in the Department of Commerce and is now independently analyzing the results now available of the employment shift data for the 3,000 plus counties of the United States for 32 employment sectors. I consider these data very useful and commend them to regional researchers as a valuable analytical tool. I only regret that I did not have time to apply the data in analyzing the depressed rural areas.

While the Ashby study reveals negative net relative changes in employment for the four states of Alabama, Georgia, Mississippi and South Carolina over the period 1950-60, the preponderant part of this shift has come from the negative shift on the industrial mix side which includes agriculture, of course. All but Mississippi gained in regional shares (or competitively) over the period, and all, of course, gained from the national growth element. Roughly the same picture emerges from the 1940-50 period also, but the regional share advantages of the latter period are increasing relative to the 1940-50 period. Given the

---

[30] Lowell Ashby, "The Geographical Redistribution of Employment," Survey of Current Business, October 1964, p. 18. See especially Table V.

[31] Robert E. Graham, Jr., "Factors Underlying Changes in the Geographic Distribution of Income," Survey of Current Business, April 1964.

Table 5. Manufacturing employment as a percent of total employment, Alabama, Georgia, Mississippi and South Carolina, SMSA's and 5(b)2 areas, 1950 and 1960

Year	Alabama		Georgia		Mississippi		South Carolina	
	SMSA	5(b)2	SMSA	5(b)2	SMSA	5(b)2	SMSA	5(b)2
1950	23.7	16.5	21.7	16.7	12.6	7.0	27.5	20.9
1960	24.4	24.0	22.4	23.2	14.2	13.6	27.4	26.8

Source: Bureau of Census, CCDB, 1960 and 1950.

effects of agriculture on the total shifts, it is evident that the four states have been able to adapt. The shift analysis at the state level only reveals the relative positions in the race for jobs. It does not reveal that those in the backstretch may be getting in a position to win while those up front may be running out of wind, relatively speaking, of course, for all the regions will win if the economy as a whole maintains a high rate of growth. The depressed rural areas are losing those industries which have retarded their growth. If one must lose, this is the kind of loss which improves one's chances of doing better in the future.

Mention should be made here too of Werner Hochwald's analysis of interregional income flows as they are related to the South.[32] Hochwald's use of factor analysis revealed that the South acted primarily as an exporter of manufactured goods but with limited local markets and limited service exports.[33] It confirmed the importance of manufacturing in explaining economic development and the shifts in primary, secondary, and tertiary industries as development proceeds, as well as the decline in the relative importance of manufacturing in the recent past for the economy as a whole. But for the South, of course, the shift from agriculture to manufacturing is critical, and most of the evidence points to the South as being successful in this respect. Yet Hochwald recognizes that the South is losing its homogeneity as growth proceeds unevenly and notes that "differences within the region thus become more interesting than regional aggregates and an analysis of intra-regional income flows may be more revealing than interregional estimates of doubtful validity."[34] Estimates of intra-regional income flows might also be of doubtful validity, but I would suggest they be undertaken anyway, especially in view of the increasing interest in regional development plans such as the Appalachian program and the increasing acceptance of the European regional programs emphasis on "growth points."[35]

---

[32] Werner Hochwald, "Interregional Income Flows and the South," Essays in Southern Economic Development, Greenhert, Melvin and W. Tate Whitman (ed.) (Chapel Hill, 1964) pp. 320-358.

[33] Ibid., p. 351.

Capital and Labor Intensity in Industries in the Depressed Rural Areas

The Area Redevelopment Administration has published an analysis of 417 manufacturing industries (4-digit SIC level) characterizing the industries by growth level, and capital and labor intensities.[36] Previously, the Office of Area Development had the Bureau of the Census publish special tabulations of the location of manufacturing plants by county derived from the 1958 and 1954 Census of Manufacturers.[37]

I have used the ARA data to divide the industries by their capital and labor intensities choosing only those industries which are characterized by very high or high capital intensities combined with very low or low labor requirements. The capital intensities are based on investment per employee while the labor intensity is based on the percentage of labor costs to total costs. I have chosen to group industries with very high capital, VHC, ($15,000 and above per employee) and high capital, HC, ($7,500 to $15,000 per employee) with very low labor, vll, (10 percent or less labor cost) and low labor, ll, (10-20 percent labor cost) in one group and industries with low capital, LC, ($1,500 to $3,500 per employee) and very low capital, VLC, (below $1,500 per employee) with very high labor, vhl, (over 40 percent labor cost) and high labor, hl, (30-40 percent labor cost) in the second group. The first group is the high capital-low labor or capital intensive group. The second is the labor intensive group, characterized by low investment per employee and high labor requirements. These categories are very useful, even if rough, approximations of those industries which lie at the extremes of the spectrum of American industries as they exhibit capital and labor inputs measured by investment and labor costs. Of the 417 manufacturing industries categorized by these elements 110 fit the extremes, the remainder exhibiting various other combinations of capital and labor, e.g. moderate investment, low labor, etc. I am assuming that industries which have high investments per employee and low labor costs are capital intensive and embody a good deal more technology than those at the other extreme which exhibit high labor costs as a proportion of total cost and low investment per employee. This is not to say that the large number of industries in the middle are not subject to capital intensification and technological change. They are and have been.

---

[34] Ibid., p. 357.

[35] ARA will soon publish a review of European redevelopment experience completed under the direction of Frederick Meyers of U.C.L.A. as part of the Section 27 research program of ARA.

[36] Growth and Labor Characteristics of Manufacturing Industries, Area Redevelopment Administration, U. S. Department of Commerce (Washington, 1964).

[37] Location of Manufacturing Plants by County, Industry, and Employment Size: 1958. Bureau of the Census, U. S. Department of Commerce (Washington, 1962).

I have constricted the analysis to the extent that the large number of industries lacking the extremes are found or not found in the rural depressed areas, or may be able to be expanded in these areas. This can be left to further research on the matter.

The data on location of industry by county have been used to determine the presence of the manufacturing industries with the specified characteristics in the 105 depressed rural areas classified 5(b)2 by ARA. They have been totalled for the 5(b)2 areas and for the SMSA's in the four-state area.

Table 6 summarizes the results and Table 7 gives the industries with the specified characteristics for the rural areas, arranged by SIC code, with the number of counties which contain the industry. Both the short-term and long-term growth trends, as shown in the ARA study, are also given.

It is immediately apparent that the proportion of actual industries found of the possible number to be found is significantly higher in the metropolitan areas than in the rural areas, a not unexpected result. On the other hand, the distribution of the industries classified by capital and labor intensities within the two groups of areas are not greatly different. Indeed, the rural areas show a larger proportion (71 percent) of capital intensive industries of the total of specified industries found than the SMSA's, (59 percent). The labor intensive industries in the metropolitan areas are a larger percent of the specified industries than in the depressed rural areas. Within the capital and labor intensive groups the distribution of industries for each of the two areas shows the same effects as noted but the number of industries to be found is too small to attach great weight to the differences found. It should also be pointed out that no industry fits our category of very high labor requirements in conjunction with very low capital, a combination of intensities evidently too severe for a developed economy to put up with.

Table 6. Actual and potential number of industries exhibiting specified capital and labor intensities for Alabama, Mississippi, Georgia and South Carolina, 5(b)2 and SMSA areas, 1958

Item	Total	Subtotal	VHC		HC		Subtotal	VLC		LC	
			vll	ll	vll	ll		vhl	hl	vhl	hl
1. Possible number	110	66	7	19	9	31	44	0	9	15	20
Percent	100	60	6	17	8	29	40	0	8	14	18
2. Four-state SMSA	69	41	4	9	8	20	28	0	6	9	13
Percent	100	59	6	13	12	28	41	0	9	13	19
3. Four-state 5(b)2	38	27	1	8	6	12	11	0	1	3	7
Percent	100	71	2	21	16	32	29	0	2	8	19
4. Row 2 divided by Row 1	63	62	57	47	89	65	64	0	67	60	65
5. Row 3 divided by Row 1	35	41	14	42	67	39	25	0	11	20	35

Key: VHC - very high capital
HC - high capital
VLC - very low capital
LC - low capital

vll - very low labor
ll - low labor
vhl - very high labor
hl - high labor

Table 7. Manufacturing industries found in rural depressed areas by growth characteristics, and capital and labor intensities, 1958

SIC code	Industry	Number of counties containing industry	Growth		Capital intensity	Labor intensity
			Short term	Long term		
2021	Creamery Butter	2	S	D	H	VL
23	Condensed and Evaporated milk	4	S	S	H	VL
24	Ice Cream and Frozen Desserts	7	S	S	H	L
41	Flour, Meal	15	S	D	H	VL
42	Prepared Animal Feeds	22	S	MG	H	VL
85	Distilled Liquor except Brandy	1	D	D	H	L
87	Flavorings	2	S	MG	H	VL
91	Cottonseed Oil Mills	19	S	D	H	VL
92	Soybean Oil Mills	5	S	S	VH	VL
94	Grease and Tallow	3	S	S	H	L
2311	Men's and Boys' Suits and Coats	2	S	D	VL	H
2443	Veneer and Plywood Containers	1	D	D	L	H
2511	Wood Furniture, not Upholstered	13	S	S	L	H
21	Wood Office Furniture	1	MG	S	L	H
41	Wood Partitions and Fixtures	2	HG	NA	L	H
99	Furniture and Fixtures, nec	2	D	VHG	L	H
2611	Pulp Mills	1	D	NA	VH	L
2753	Engraving and Plate Printing	1	MG	S	L	VH
89	Bookkeeping and Related Work	1	S	S	L	VH
2813	Industrial Gases	1	S	HG	VH	L
16	Inorganic Pigments	1	MG	HG	VH	L
18	Organic Chemicals, nec	3	HG	VHG	VH	L
19	Inorganic Chemicals, nec	3	S	VHG	VH	L
21	Plastics Materials	1	MG	VHG	VH	L
34	Pharmaceutical Preparations	2	HG	VHG	H	L

Table 7 (continued)

SIC code	Industry	Number of counties containing industry	Growth		Capital intensity	Labor intensity
			Short term	Long term		
2861	Gum and Wood Chemicals	3	S	S	H	L
71	Fertilizers	2	MG	S	VH	L
73	Agricultural Pesticides	10	MG	NA	H	L
91	Glue and Gelatin	1	S	S	H	L
99	Chemical Preparations	2	S	NA	H	L
2951	Paving Mixtures	3	MG	VHG	H	L
3241	Cement, Hydraulic	1	D	HG	VH	L
73	Ready-Mixed Concrete	27	MG	NA	H	L
3356	Rolling and Drawing, nec	1	HG	VHG	H	L
3613	Switchgear and Switchboards	1	MG	NA	L	H
3717	Motor Vehicles and Parts	2	MG	HG	H	L
31	Shipbuilding and repairing	1	S	S	L	VH
3993	Signs and Advertising Displays	3	HG	HG	L	H

Source: Growth and Labor Characteristics of Manufacturing Industries, U. S. Department of Commerce, A. R. A. (1964) Table I.

The SMSA's have 69 of the 110 industries. Thirty-four of these industries are also found in the rural areas while only four industries in the rural areas are not found in the metropolitan areas of the four states. Thirty-five industries found in the SMSA's are not found in the rural areas. Thus 73 of the 110 possible are found in both areas combined. Of the industries which the 5(b)2 areas lack but which are found in the metropolitan areas, half are found to be labor intensive.

The rural areas then have 35 percent of the possible industries as opposed to the metropolitan areas' 63 percent. They have 41 percent of the possible capital intensive industries but only 25 percent of the labor intensive industries. The metropolitan areas of the four states have a greater share of each, 62 percent nd 64 percent, respectively. This reflects more the wider spread of manufacturing industries in the metropolitan areas necessary to service larger markets than the ability of rural areas to capture capital intensive industries.

If we look at the kinds of industries which the rural depressed areas had in 1958, we observe that they fit the pattern of the resources available in the southern areas. For example, 15 of the 105 counties have flour and meal mills, 22 have prepared animal feeds, 19 cottonseed oil mills, and 10 agricultural pesticides. There are others which depend on resource based inputs or service the resource based industries, such as wood furniture (found in 13 counties) and other wood based industries in a total of six counties. The chemicals and allied products are found in 29 counties. Fourteen of the industries are found only in one county and nine only in two counties. Because there are more industries in the capital intensive than in the labor intensive groups in the 5(b)2 areas, they are found more often, of course, than the labor intensive industries.

The tabulations of the industries for 1958 were compared to those made for 1954. The changes observed were mostly in shifts of employee size groups by plant. There were few differences in the kinds of industries or their distribution over the rural areas in the four states.

It was previously noted that the choice of the extreme combination of capital and labor removed from consideration a large number of industries which exhibit moderate investment ($3,500 - $7,500 per employee). A review of other industries reveals 12 industries consistently found in the depressed rural areas, only one of which exhibited high capital intensity (bottled and canned soft drinks) and one low capital intensity (wood products). The remainder, such as meat packing plants, prepared meats, fluid milk, manufactured ice, logging camps, sawmills, veneer and plywood plants, printing and machine shops were in the moderate capital class.

The number of plants found in the 105-county area is shown in Table 8. Of the 192 plants in the 38 industries, 13 percent were located in the 18 counties of Alabama, 28 percent in the 40 counties of Georgia, 43 percent in the 35 counties of Mississippi and 16 percent in the 12-county South Carolina area.

Most of the plants were small, 87 percent having fewer than 50 employees. Sixty-two percent had fewer than 20 employees. Only one had over 1,000 workers, and only five had between 250 and 499 employees. Most of the meal and feed mills, concentrated in Georgia and Mississippi, had fewer than 20 employees. This was also true of ready-mix concrete

Table 8. Number of plants, by size, Alabama, Georgia, Mississippi and South Carolina, 5(b)2 areas, 1958

Size	Total	Alabama	Georgia	Mississippi	South Carolina
(employees)			(number of plants)		
1-19	120	16	40	43	21
20-49	47	8	7	27	5
50-99	12	--	4	5	3
100-249	7	2	1	4	--
250-499	5	--	2	3	--
500-999	--	--	--	--	--
1000 & over	1	--	--	--	1
Total	192	26	54	82	30
Percent in state		13.5	28.1	42.7	15.6

and agricultural pesticides. All are capital intensive. Cottonseed oil mills tend to be slightly larger, as are soy bean oil mills. Both are capital intensive and two-thirds of them were located in Mississippi. Ready-mix concrete operations were small and found in all four states.

The larger plants, of over 250 employees, were in chemicals (2), pesticides (1), pharmaceuticals (1), and wood furniture and switchgear. Only the last two were labor intensive. The other labor intensive, low capital industries such as veneer, furniture and other wood using industries were usually small, only two plants having more than 50 employees. Both of the apparel plants were relatively small.

The labor intensive industries in the rural areas accounted for about 16 percent of all the plants, while the remainder (162 plants) were classified as capital intensive. Thus we see that the capital intensive industries dominate both in number of industries found and the number of plants found in those industries. However, we must note that of our 105 counties, 36 had none of the 38 industries found in the rural areas. The state variation was substantial. Eight of the 18 Alabama counties had none, while all of the South Carolina counties had one or more of the industries represented. Over a third of the 5(b)2 counties in Georgia and Mississippi possessed no industry with the capital or labor extremes.

There appears to be no relationship between the presence or absence of these industries and the growth in the manufacturing labor force over the 1950-60 period. Counties with the industries showed both increases and decreases in the manufacturing sector. However, no county with at least four of the industries showed a decrease in manufacturing employment but it must be remembered that most 5(b)2 counties managed to increase employment in manufacturing over the period. The presence of other industries (between the extremes I have chosen) are obviously responsible for the changes in manufacturing employment in the rural areas not having one of the 110 possible industries of the 417 classified in the ARA study. As for those rural areas which did have the industries, obviously their presence preserved or increased manufacturing employment in most cases and would certainly have served to increase total employment over the period. Further research on their effects is needed, however. When the 1963 data become available they may be used to continue and expand the analysis made here. Of course, employment data on the 4-digit level would be a most valuable adjunct to the analysis. The 1954 and 1958 distribution of the industries was very much the same. We need a longer series, and the availability of the plant location data on tape will make the task much easier.

It is important to the growth of nonfarm industry in rural areas that rapidly growing industries be attracted to those areas. The kinds of industries which have been reviewed here have for the most part exhibited moderate or less than moderate growth over the period 1947-1962, measured by the industry ratio of value added in 1962 to 1947 compared to all manufacturing. The short-term growth patterns (employment in 1958-60 vs. 1961-62) are even less impressive (see Table 7). Some of the industries exhibit high growth, notably the chemicals, but only 26 of the 192 plants fall into the high or very high growth categories, and only two of the 12 industries involved are labor intensive. What is needed to absorb the out-migration from the farm is a collection of high growth, labor intensive industries,[38] and these are far more likely to be located in urban areas where the service industries play a much larger role. Manufacturing industries tend to place emphasis on labor saving techniques (sometimes I think even to the detriment of short-run costs) and the possibility of attracting enough manufacturing to the rural areas to stimulate employment substantially in the face of declining labor requirements is therefore made even more difficult.

We must also note again that the majority of the plants found in the rural areas are quite small, even if capital intensive, and that even the high growth industries had relatively small plants. The efficiencies of scale may be missing or lessened thereby. The economies which accrue to the plants in rural areas are not likely to have been developed internally, i. e. by their own management and organization of production. They are much more, one can surmise, the product of embodied technical progress, mainly from the capital side. Whatever may be done to raise the technical capabilities of rural workers (as well as the abilities of managers) will probably have a greater payoff per dollar spent than the importation of capital. This is not to say that the rural areas should take a jaundiced view of capital imports. Certainly the opposite is true, and if the rural areas could import entrepreneurial and managerial skills they would benefit even more.

---

[38] Labor intensity is the important factor. If slow growing industries are shifting their location, e.g. North to South, the employment impact on the recipient region may be substantial.

The difficulties of attracting capital and management to the rural areas are well known, though they may often be exaggerated. Certainly recent southern experience gives ample evidence of the growth of manufacturing and the general stimulation of the economy of the South, especially the urbanized areas.[39] But the depressed rural areas, under observation in this instance, have been shown to have a number of industries which are dependent more on agriculture and natural resources than on the presence of extensive local markets or human resources.

Area Redevelopment Loan Experience

The ARA loan experience in the four-state 5(b)2 areas tends to bear out this point. Of the 21 loans made for financial assistance totalling $4.7 million, the greatest number of loans were made for resource using industries; labor using industries such as apparel, shoes and textiles were also represented.[40] One loan each was made for a business forms plant, mobile homes, tile, cement blocks, and plastics, and two meat packing establishments were assisted. Redevelopment proceeds by inching along in developed economies. Congress notwithstanding, we will probably have to leave great leaps forward to other economies.

The depressed rural areas which do manage to attract industry are in a position to import the latest technology, a requisite to their being competitive and one which will give them other advantages over the earlier developed areas. Some rural areas can benefit from the increasing demand for recreation and even here there is good evidence that substantial capital must be invested to create recreational complexes rather than small, individual recreation businesses. Extensive water resource development is one example. Sparsely settled rural areas, if they possess few resources other than land, are not generally good candidates for development unless they are fairly close to urban centers. We need a good deal more research on the relationships of size to developmental probabilities. Our notions of what creates external economies and comparative advantages, via the forces of agglomeration, will certainly be improved thereby.

---

[39] See Hochwald, op. cit., pp. 335-6.

[40] Directory of Approved Projects, March 31, 1965, A. R. A., U. S. Department of Commerce (Washington, 1965).

And, of course, to get at the relative weight each of the many factors involved in the economic growth of rural areas plays in development we might hope someday to measure the sources of growth at the regional level as Denison has for the United States.[41] This is especially important from the standpoint of arriving at effective public policy in promoting the economic and social development of lagging and depressed regions. It goes without saying that regional economists will need more capital and technology of their own to accomplish a task of this order.

---

[41] Edward F. Denison, The Sources of Economic Growth in the United States, Committee for Economic Development (New York, 1962).

EFFECTS OF THE NATURAL RESOURCE BASE ON CHRONICALLY DEPRESSED RURAL AREAS*

W. B. Back
Economic Research Service
United States Department of Agriculture

The general problem for this paper pertains to the relation (or lack thereof) between the uneven geographical distribution of natural resources (per capita and per unit of area) and the uneven geographical distribution of (or growth in) income per capita. By orienting the paper to differential rates of economic growth among areas within the nation, I am attempting to avoid the issue of whether natural resources are of importance as sources of national economic growth.[1] I interpret the term "rural areas" in the title of this paper to mean areas where most of the people presently, or at least until recently, are directly or indirectly dependent upon farm income. Accordingly, farmland is the natural resource of central interest. This narrow interpretation of my assignment has the advantage of permitting a focus on a particular category of natural resources (farmland) and a particular kind of local economies (agriculturally based). I will broaden this perspective toward the end of the paper. Nevertheless, in defense of this orientation, I will admit holding the hypothesis that most currently depressed rural areas have a long history of relatively low per capita incomes from farming, and whatever contributed to this initial situation deserves to be counted as a contributor to the persistence of low incomes in these areas. This is an explanatory hypothesis, not one suggesting relevant policies for solving the problem.

To have some connection between reasoning and reality, I have assembled a small amount of data for selected rural areas to illustrate some aspects of hypotheses relating natural resource differences with differences in levels of per capita incomes. The selected areas and data also are intended to suggest some methods for testing the hypotheses in this paper. Following the illustrations of some relations among farmland resources, population and incomes, I present a more abstract discussion relating natural resources (farmland) and differential rates of economic development among areas. My closing section deals with some policy and research implications.

---

*Mark Regan, M. L. Weinberger, Norman Landgren and Roger Strohbehn contributed some of the ideas included in this paper.

[1] Cf. Theodore W. Schultz, "Connections Between Natural Resources and Economic Growth," in Joseph J. Spengler, Editor, Conference on Natural Resources and Economic Growth, 1961 (Distributed by Resources for the Future, Inc.).

Illustrations of Some Effects of Quality of Farmland and Population Density

I selected some counties to represent areas depicting wide ranges in qualities of farmland and densities of rural farm population for purposes of developing the illustrative data. I classified each of these attributes as high, medium, and low--which resulted in combinations yielding nine subclasses (Table 1). Criteria for selecting the counties (areas), other than obtaining the wide ranges of resource qualities and population densities, were (1) rural farm population of area greater than 25 percent of total, and (2) ceteris paribus, areas with which I am more familiar. The rural farm population criterion was intended to yield farm-based local economies, by eliminating or minimizing urban impacts to simplify the interpretation problem. However, this intent may not have been fully realized. The classification of counties (areas) by land quality and population density was purely a product of judgment.

Population density may reflect a number of factors of an institutional nature influencing per capita income levels. However, my purpose was to express approximately an equal "quantity of natural resources" (farmland) per capita for areas on any left to right diagonal in the table. Consistent with this purpose, the theoretical expectations of economic well-being of people in relation to this classification of areas (counties) would be as follows:

(1) The main diagonal in the table should contain subclasses with economic attributes near typical or average of farm-oriented local economies;

(2) People in subclasses in the lower left portion of the table should fall below average in economic well-being, with the economically most depressed area being in the lower left corner; and

(3) The opposite relations should hold for the subclasses in the upper right portion of the table.

Table 1. Selected sample of areas and counties to illustrate effects of resource quality and population density upon socioeconomic status of people in the areas

Farmland resource quality	Rural farm population density		
	High	Medium	Low
High	(Miss. Delta) Miss. Counties: Bolivar Tunica Sunflower	(Central Corn Belt) Ia. Counties: Tama Franklin Hancock	(Irrigated Cotton) Tex. Counties: Crosby Floyd Lamb
Medium	(Coastal Plains) N. C. Counties: Bertie Northhampton Gates	(Corn Belt Fringe) Mo. Counties: Carroll Clinton Lafayette	(Transition Zone) Okla. Counties: Alfalfa Kingfisher Major
Low	(Appalachia) Ky. Counties: Magoffin Wolfe Knott	(Ouachita-Kiamichi Highlands) Okla. Counties: Latimer Pushmataha Atoka	(Great Plains-Livestock) Nebr. Counties: Garfield Loup Wheeler

Some assessment of judgment used in the classification can be made from the data in Table 2. The acreage per farm within the high-population density column decreased with successive lower quality resource groups. However, within this population density, the acreage per capita of rural farm population was about the same for three resource qualities. Both acreage per farm and acreage per capita increased with successive decreases in resource quality within the medium-population density classes. However these acreage increases are "judged" to be much less than the decrease in resource quality down this column of the table. Such "irregularities" are not considered serious enough to modify the expected ordinal relations of resource situations to income. The declining percent of the total population in the labor force with increase in rural-population density will accentuate the expected inverse relation between population density and economic well-being. The dollar values per acre of farm real estate were the only data introduced to reflect

Table 2. Selected population and resource data for sample areas, 1959-60*

Farmland resource quality	Items	Rural farm population density		
		High	Medium	Low
		(Miss. Delta)	(Central Corn Belt)	(Irrigated Cotton)
High	Population			
	Rural farm in percent of total	43	45	38
	Labor force in percent of total	28	36	34
	Farmland resources			
	Acres per farm	150	191	543
	Acres per capita of rural farm population	23	50	106
	Dollar value per acre	185	309	229
		(Coastal Plains)	(Corn Belt Fringe)	(Transition Zone)
Medium	Population			
	Rural farm in percent of total	43	30	43
	Labor force in percent of total	29	36	37
	Farmland resources			
	Acres per farm	104	212	396
	Acres per capita of rural farm population	22	68	142
	Dollar value per acre	178	158	129
		(Appalachia)	(Ouachita-Kiamichi Highlands)	(Great Plains-Livestock)
Low	Population			
	Rural farm in percent of total	32	26	59
	Labor force in percent of total	16	24	41
	Farmland resources			
	Acres per farm	92	376	1330
	Acres per capita of rural farm population	25	144	344
	Dollar value per acre	55	32	42

*Agricultural Census of 1959 and other Census data for 1960.

variations in land resource quality. Although such values correlate poorly with land resource quality (productivity), they do illustrate the wide range of resource qualities included and, in general, the extent of variation within classes.

Generally, the per capita incomes of the populations did relate to population density and resource quality variables in accordance with expectations (Table 3). Exceptions of note were the Mississippi Delta counties, the Corn Belt fringe counties, and the irrigated cotton area. We all are aware of the unusual institutional conditions in the Mississippi Delta, and further elaboration on these seems unnecessary. Evidently, the Missouri Counties selected to represent the Corn Belt fringe either were misplaced in the classification or had conditions favorably influencing income levels not reflected by the classification. It is believed the irrigated cotton region in the High Plains of Texas poorly depicts the intended attributes of the high-resource quality and low-population density variables. In particular, the gross farm income per acre was considerably lower than these incomes for other high quality land resource areas. Perhaps areas as large as three counties with attributes intended for this subclass are nonexistent.

Data to measure economic well-being of farm people only in the areas are not readily accessible. The gross farm income data give some indications of relative incomes among farm-operator families of the various subclasses. An additional measure of well-being of farm-operator families is the level-of-living index. These indices correspond reasonably well to theoretical expectations.

The data presented merely illustrate what perhaps is axiomatic--that, for a local economy strongly oriented to natural resource industries, more (less) natural resources per capita results in more (less) income per capita. This description of the relation for a few areas with data for 1959-60 provides a basis for addressing ourselves to some relevant questions about the connection between differences in natural resources of areas and economic growth in these areas. That is, over time, why did not rural people in areas such as those classified in the lower left corner of Table 1 acquire sufficient natural resources per capita to match the income levels of people in areas such as those in the opposite corner of the table? We know that poverty has persisted in rural areas of Appalachia, Ozarks, parts of Coastal Plains, and in other regions for many decades. Land is fixed geographically; adjustments in factor markets must occur through mobility of nonland factors. Is there a connection between natural resources of areas and (1) functioning of factor markets? (2) growth in quality and/or quantity of other factors in a region? (3) differential rates of technological advance in farming

Table 3. Selected socioeconomic data for sample areas, 1959-60*

Farmland resource quality	Items		Rural farm population density		
			High	Medium	Low
			(Miss. Delta)	(Central Corn)	(Irrigated Cotton)
High	Personal income per capita of total population (dols.)		641	1,340	1,479
	Gross farm income:	per farm (dols.)	11,666	14,521	27,762
		per acre (dols.)	78	76	51
		percent from crops	95	24	90
	Level of living index of farm operator families		62	137	149
			(Coastal Plains)	(Corn Belt Fringe)	(Transition Zone)
Medium	Personal income per capita of total population (dols.)		662	1,477	1,525
	Gross farm income:	per farm (dols.)	4,758	10,561	10,455
		per acre (dols.)	46	50	26
		percent from crops	83	29	50
	Level of living index of farm operator families		68	113	113
			(Appalachia)	(Ouachita-Kiamichi Highlands)	(Great Plains Livestock)
Low	Personal income per capita of total population (dols.)		485	883	982
	Gross farm income:	per farm (dols.)	773	2,531	13,961
		per acre (dols.)	8	7	11
		percent from crops	83	11	8
	Level of living index of farm operator families		34	60	115

*Agricultural Census of 1959 and other Census data for 1960.

among regions? Such are the questions of relevance in assessing the effect of the natural resource base on chronically depressed rural areas.

Relation of Natural Resource Characteristics to Man-Land Ratios and Functioning of Labor Markets

About a year and a half ago, Emery Castle attempted to defend the proposition that the geographical distribution of farm income was inversely related to the versatility of the land for farming.[2] More explicitly, his hypothesis attached the higher farm incomes to land with the more limited ranges of farm production alternatives because such land resource situations encouraged specialization and attendant greater production efficiency. Alternatively, the hypothesis was that land resource areas permitting a highly diversified agriculture would tend to be associated with self-sufficient, low-income farming.

Perhaps Castle's hypothesis is consistent with facts about land resources and farm incomes in the western states, but it is inadequate for explaining facts such as those for the sample areas presented above. That is, the traditionally more specialized commercial farming areas such as Great Plains Livestock, Irrigated Cotton, and Mississippi Delta are not the higher farm income areas. Nevertheless, perhaps some contribution to explaining geographical differences in farm income per capita in the western region can be made by his hypothesis, but I would like to express an alternative explanation to the phenomena he observes. The dry land farming areas of the Great Plains and the intermountain region did permit only a limited range of production alternatives and, thereby, encouraged specialization. Nevertheless, this specialization established types of farming with low labor requirements per unit of land and associated capital. Technological and economic forces further reduced labor requirement per unit of land (and capital), but the magnitude of the problem of adjusting combinations of labor and other resources in response to these forces was much less than in most other farming regions.

---

[2] In a Seminar of the Resource Development Economics Division, Economic Research Service, U. S. Department of Agriculture, Washington, D. C., December 3, 1963. Emery Castle informs me that he has empirical research underway to test this hypothesis, and that an elaboration of the hypothesis will accompany publication of the results of the empirical study. Reference to these ideas in this section only briefly state his orientation to relating natural resources and farm income in the western region.

Additional conditions contributing to better functioning of the labor market in these regions were (1) the "mortality" of the more inefficient farm units through vagaries of weather, and (2) the difficulty of entry in farming in these regions with sufficient resources to survive.

A converse to the above is that, in regions where labor-intensive farm enterprises developed, the high initial man-land ratios added to the burden of the labor market to adjust to rapidly changing technological and economic conditions. Although recent rates of migration from farm to nonfarm employment has been highest for the lowest income regions,[3] the magnitude of this adjustment problem still is greater for these areas.

These connections of natural resource characteristics with economic well-being of people in rural areas via the operation of the labor market under pressure of strong technological and economic forces also presupposes an economy providing farm labor with nonfarm employment alternatives. Otherwise, we could have had extensive rural poverty in such regions as the Great Plains.

Connections Between Natural Resources and Technological Change in Farming

Some phenomena closely allied to the thesis thus far is the adaptability of natural resources to technological innovations in farming. The main characteristic of relevant resources pertains to their adaptability for machine technology in farming. Without application of such technology, a commercial agriculture with high per capita income is not likely to develop in an area.

The Appalachian region is an extreme example of a region where topography provides very limited potential of natural resources for application of machine technology in farming. The Ozark region and the Ouachita-Kiamichi highlands also have important natural resource limitations in this respect. One also may hypothesize that the character of the natural resources in these regions, mountainous terrain, were barriers to mobility of labor in the form of impediments to transportation or the development of these facilities. The hypothesis that mountains contributed to the cultural isolation and social institutions we associate with obstacles to economic growth in Appalachia does seem plausible.

---

[3] Cf. C. E. Bishop, "Economic Aspects of Changes in Farm Labor," in Iowa State University Center for Agricultural and Economic Adjustment, Labor Mobility and Population in Agriculture, Iowa State University Press, 1961, pp. 36-49.

One contributing factor to per capita income differences between the Mississippi Delta area and the Irrigated Cotton area in the High Plains of Texas is the differences in machine technology used in cotton production. The character of the natural resources in the two areas contributed to this phenomena by contributing to the original man-land ratios and associated social institutions.

This emphasis on machine technology does not exclude the possibility of other existing important connections between characteristics of farmland and differential rates of technological (and income) advances among farming regions. That is, given the same rates of adoption, do different qualities of farmland result in different income effects of an innovation in farming? If so, can these differences be identified by areas or regions? Although I would hypothesize a positive answer to the first question, the dearth of knowledge required to answer the second question discourages my emphasizing this kind of connection between natural resources and per capita incomes in rural areas. I suspect a larger component of differential effects of technological advance on farm income among regions is associated with differential adoption rates. These rates, in turn, are connected with natural resources through per capita income differences among areas initially related to differences in natural resources per capita.

There are technological developments in processing, transporting and storing products of farms which affects the influence the quality of farmland has upon interarea competition in farm production. Such technological developments may strengthen the comparative advantage of an area as derived from its natural endowments for production of such products as fruits and vegetables. They threaten the dairy industry in the Northeast that now is associated with low quality farmland. These developments also have created a need for adjustment to less intensive land use. Thus, efforts to initiate new farm enterprises in those depressed rural areas with severe natural resource limitations are likely to be unsuccessful.

These effects of technology in connecting natural resources with per capita incomes in rural areas may be tempered or modified by institutional restraints. Our farm commodity programs provide such a restraining influence. Also, the organization and functioning of farm market institutions temper the influence of technology in associating more closely the quality of farmland with farm production and income.

Connections Between Natural Resources and Employment of Capital in Farming

I consider capital originating in the farm sector to be mainly accumulated savings of land and labor income. Employment of capital in farming is highly associated with the nature of the technology used, and, therefore, most of the connections between natural resources and technology as discussed above would apply as connections between natural resources and capital formation. There are, however, some additional relations of natural resources and employment of capital.

Farmland is the major instrument of security offered in exchange for credit. As such, the main burden for supporting an inventory of capital assets on farms rests on the income-earning potential of land, and this surely relates to the quality of farmland as well as to the acreage per farm unit.

What goes under the name of farm real estate is a combination of nonman-made productive resources (natural resources) and attached (fixed) capital items or amendments. The quality of the natural resource component of farm real estate affects the intensity of the capital amendments economically feasible and the economic yield from these investments. Examples of this phenomena arise in connection with the small watershed development program of the Soil Conservation Service. The benefit-cost ratios generally are higher for the watersheds with the more productive farmland. Similarly, natural resource quality largely determines the degree of economic feasibility of irrigating or draining land for farming.

In addition to capital used as physical productive items on farms, capital investments also are made in people engaged in farming or residing on farms. If such investments are retained in the area as production inputs in the form of skills or other qualities of a population, they reflect contributions of natural resources to the per capita incomes in the area. This effect on per capita income is in proportion to the contribution natural resources made to the farm earnings supporting these investments in people. However, there is another important matter to consider in relating natural resources to human capital employed in rural areas. If the natural resource base for farming in relation to rural population is of such deficiency that most of the benefits from this capital must be realized from employment in other occupations in other areas, a heavy outflow of capital from the area likely will accompany out-migration of people. This capital outflow will adversely affect per capita incomes in an area. My hypothesis in this respect is that the loss of such capital by rural areas is less severe for those with the greater natural resource advantages for local farm and nonfarm economic development. In Table 2, the data on percent of the population in the labor force are consistent with this hypothesis. It is obvious that past high rates of out-migration of people from the high-population density rural areas have resulted in residual populations with a low proportion in productive age groups.

One could broaden the thesis about investments in people to the entire subject of social and private overhead capital in local areas. Surely, there are variations in the type and level of services provided by local economies that can be connected, in part, to natural resource contributions to the overhead capital and/or failure of the natural resource base to sustain growth in this capital. This subject deserves an analysis with scope and depths beyond the purposes of this paper.

Relations of Productivity of Farmland to Nonfarm Local Economic Developments

Up to this point, major emphasis has been placed upon natural resource contributions to the economy of a local area in terms of initial farmland per capita of rural farm population. Several years ago, Galbraith expressed part of this thesis as differing characteristics of the settlement pattern among areas, but he did not explain why such original differences would be perpetuated through time as I have attempted to do.[4] Booth has confirmed the persistent connection between the farm settlement pattern and per capita incomes in counties of Eastern Oklahoma.[5] The emphasis on man-land ratios avoids questions relating to connections between natural resources and concentration of economic activities within space. Much of such concentration would be associated with sheer volume of farm production per unit of area making up the local economies. This, in turn, would be associated with quality of farmland as classed in Table 1

There are many economic activities locationally connected with farming. Any local farm sector requires local servicing in relation to handling of nonfarm-produced inputs, marketing, processing, and exporting. People associated with all these sectors require consumption services A local economy with concentration of these activities on less space functions better because space itself as it increases eventually becomes a cost.

---

[4] J. D. Galbraith, "Inequality in Agriculture--Problems and Program," First J. J. Morrison Memorial Lecture, Dept. of Agricultural Economics, Ontario Agr. College, 1956. (Mimeo.)

[5] E. J. R. Booth, Economic Development in Eastern Oklahoma Until 1950, unpublished Ph.D. Thesis, Vanderbilt University, 1961.

Ceteris paribus, one may expect rural communities with the greater concentration of economic activities relating to farming to be the more attractive for locating nonfarm industry. There would be advantages in respect to growth of a labor supply over time as well as advantages associated with the potential of the local area for economic development. That is, there are advantages of scale in growth of local areas when scale is measured in terms of concentration of economic activities as well as size of the area.

Some Policy and Research Implications

In this paper, I have explored some of the possible ways the natural resource base of rural areas (farmland) are related to economic well-being of people residing in these areas. Generally, I stressed farmland per capita rather than *quality (productivity)* per se, and, through this orientation, I stressed variables relating to the man-land ratio over time

A simple implication of my thesis is that any existing areas in the lower left corner of my Table 1 need "more land per man," and this can be done in one of two ways: (1) increase the "economic supply" of land in these areas through capital investments (developments), or (2) reduce the number of people per unit of area of land. Although the first alternative should not be ignored as a means of increasing per capita incomes in rural areas, there are two major limitations of this approach: (a) much of our hard-core rural poverty is located on land with very small potential for development, and (b) investments to develop farmland, where successful, have severe interarea income distributional effects because of the low price and income elasticities for farm products.[6] The second approach also is not without limitations; not only is migration from depressed rural areas selective in respect to productivity of members of the labor force; it also results in exportation of investment (in labor as well as physical items) from these areas. Nevertheless, the policy issue relating to this alternative pertains to social costs and returns of moving people to economic opportunities or vice versa. Some research on this issue seems to warrant a high priority. Any study involving the latter alternative (moving job opportunities to people) surely would include consideration of availability of natural resources other than farmland.

---

[6] Cf. W. B. Back and J. Dean Jansma, "Some Distributional Effects of Public Investments to Develop Farmland," to be published as arranged by the Interregional Land Economics Committee.

From our desire to simplify and express phenomena numerically, we sometimes overlook some of the more crucial variables underlying depressed rural areas. In closing, I want to recognize three possible such omissions relating to natural resources. First, I have not considered differences in land tenure institutions as possible contributions to area differences in per capita incomes. The low per capita income in the Mississippi Delta area suggests the likely importance of land tenure institutions. If we interpret land tenure to encompass problems in acquisition of rights to use of land, then this now could be at the heart of the problem of acquiring sufficient land for adequate farm incomes. Second, a closely related issue is the influence of resource income distribution within an area upon its potential for development. My hypothesis is the kind of distribution of land income among rural people in the Mississippi Delta is partly responsible for the depressed economic condition of that area. Such a hypothesis could be tested in research. Third, I have neglected consideration of changes in quality of land resources over time, such as would occur from soil erosion, as conditions contributing to the development and persistence of chronically depressed rural areas. This possibility also could be subjected to empirical test in future research.

Since the natural resource base of an area tends to be a fixed condition, matters of policy focus upon conditions that can be varied, or the instrumental variables. However, inclusion of considerations of natural resources in "policy oriented" research on low income problems can be defended on grounds of the interdependencies among natural resource and instrumental variables as emphasized in this paper.

A CASE STUDY OF A PERSISTENT LOW INCOME AREA IN SOUTH CENTRAL KENTUCKY--ITS NEEDS AND POTENTIALS FOR DEVELOPMENT

E. L. Baum and R. B. Glasgow
Economic Research Service
United States Department of Agriculture

The five-county Kentucky area (Barren, Cumberland, Hart, Metcalf and Monroe) with whose economic history, status and prognosis we are here concerned has most if not all the characteristics usually associated with rural areas with persistent low incomes.[1] Among these are: a declining population for the past two decades, a very high proportion of the labor force employed in agriculture, a predominance of relatively small farm firms, relatively low levels of educational attainment for the population, relatively large percentages among occupied dwellings of dilapidated and deteriorating units, and family and per capita incomes well below state averages, and amounting to less than 50 percent of the United States average.

Since the population of this five-county area is more than 85 percent rural, a rather good overview of the relative economic status of the whole area is provided by comparing the economic status of the rural population of each county in the study area to that of the rural population of each other county in the United States (Table 1).

We have made such a comparison for the following five factors usually associated positively with relative economic distress. (1) the

---

[1] This area has been the subject of three studies. They are as follows:

Income Problems of Rural Families in South Central Kentucky, 1956, by W. Keith Burkett and James F. Thompson, Kentucky Agr. Exp. Sta. Bul., in process of publication.

Rural Family Spending and Consumption in a Low-Income Area in Kentucky by Jean L. Pennock, U. S. Dept. of Agr., Home Economics Research Report No. 26, August 1964.

Application of Activity Analysis to Regional Development Planning: A Case Study of Economic Planning in South Central Kentucky, by Robert G. Spiegelman, E. L. Baum, and L. E. Talbert, U. S. Dept. of Agr., Tech. Bul. No. 1339, March 1965.

Table 1. Percentile rank of Kentucky counties among counties in the United States, with respect to attributes associated with relative economic status of the rural population, five-county area in South Central Kentucky, 1960[a]

County	Dependency ratio[b] (1)	Rural family income, 1959		Level of educational attainment[c] (4)	Adequacy of housing[d] (5)	Composite of col. 1 to 5 (6)	Family median income, 1959		
		Number under $3000 (2)	Percent under $3000 (3)				All (7)	Rural (8)	Rural farm (9)
Barren	15	94	92	85	63	78	85	90	89
Cumberland	32	60	97	96	82	82	98	96	95
Hart	45	83	86	77	85	85	91	87	87
Metcalf	13	66	96	88	75	76	98	96	95
Monroe	50	81	98	89	80	88	98	97	96

[a] First percentile is highest; 100th percentile is lowest.

[b] The ratio of persons under 20 years of age and 65 years old and over to persons 20 through 64 years of age, 1960.

[c] Percent of rural persons 25 years old and over with less than 7 years of school completed, 1960.

[d] Percent of rural family housing units dilapidated and deteriorating, 1960.

number of families with incomes of less than $3000, (2) the percentage of families with incomes of less than $3000, (3) the percentage of persons 25 and over who have completed less than 7 years of schooling, (4) the percentage of occupied housing units that are dilapidated or deteriorating, and (5) the ratio of persons under 20 and over 65 years of age to persons aged 20 through 64.

We have also weighted equally the rankings of each individual factor to obtain rankings with respect to the composite of the five factors. The highest rank with respect to this composite for any of these five counties is the 76th percentile. For the percent of families with less than $3000 income factor the best rank for any of our study counties is the 86th percentile. With respect to this individual factor the other four counties rank from the 92nd to the 98th percentile. The fact should be kept in mind that these rankings are in relation to rural populations of other counties. If comparison were to total population, the relative ranking of our study counties would undoubtedly be lower yet.

Let us now look in a little more detail at the agricultural, population, and employment and income characteristics of this five-county area.

Agriculture

Since agriculture is the predominant occupation in the five-county study area, a short review of the changing structure of agriculture would be instructive.

During the 1954-1959 period, the numbers of farms decreased by approximately 2,000 in the study area, and land in farms decreased approximately 14,000 acres. This trend was similar to that for Kentucky and the United States.

In 1959, the average size of commercial farms in Kentucky was 148 acres, with an average value of land and buildings per farm amounting to $19,600. In the five-county study area, the average size of commercial farms was approximately 115 acres, with an average value of land and buildings per farm amounting to slightly over $10,000. In general, the commercial farms in the study area were small with relatively low levels of capitalization.

Farm operators in the area, because of small farm size, low levels of capital, and education, are using below average (for Kentucky) levels of technology and have relatively low levels of productivity.

The study area has relatively few commercial farms with a $10,000 and over gross value of farm products sold. However, the number of these farms has increased during the 1950 decade (Table 2). The area experienced a marked decrease in farms with less than $2,500 gross sales. Although there has been an increase in the number of farms with gross sales of $5,000 and over, 77 percent of the commercial farm operators had gross marketings of less than $5,000 in 1959.

Table 2. Distribution of farms, by value of gross farm sales, five counties in South Central Kentucky

Value of farm products sold	Commercial farms		
	1950	1954	1959
$10,000 and over	61	143	342
$5,000 to $9,999	517	621	1,246
$2,500 to $4,999	1,791	2,921	2,999
Less than $2,500	7,856	5,948	2,280
Total	10,225	9,633	6,867
Part-time	1,361	1,160	1,440
Residential	1,609	1,045	1,380
Total	2,970	2,205	2,820

Source: Census of Agriculture 1950, 1954, and 1959, Kentucky, Vol. 1, Bureau of the Census, U. S. Department of Commerce.

Income

The average per capita income for the five-county study area in 1960 (1959 incomes) was $921, as compared with $1,322 in Kentucky and $1,850 in the United States. Three of the five counties had per capita incomes less than $775. Employment and relatively higher incomes in Glasgow were undoubtedly instrumental in raising the region's per capita income levels closer to the state level. Per capita incomes in the study area (in 1959) averaged about 70 percent of the state and about 50 percent of the national per capita incomes. Family median incomes, and median incomes for males, 14 years and older, in the five-county area were more unfavorable when compared with comparable Kentucky and U. S. figures.

The magnitude of low incomes in the study area is indicated in the comparative data on proportions of families with 1959 incomes less than $3000. The proportion of families in the "poverty" category in the five-county study area is about three times the proportion in this category in the United States (Table 3).

Median family income increased from 1949 to 1959 (in 1959 dollars) in all counties by a slightly larger percentage than the average for the United States. The actual dollar difference between the study area and both Kentucky and the United States, however, increased during the decade. In a sense, therefore, the five-county area was only technically better off relative to state and nation in 1960 than in 1950.

Population Characteristics

The area as a whole has declined from a population of 81,000 in 1940 to 70,000 in 1960. All counties experienced a decrease in population from 1950 to 1960, and only Barren escaped a decline from 1940 to 1950. Kentucky and the United States experienced 3.2 percent and 18.5 percent increases, respectively, from 1950 to 1960 (Table 5).

Although all counties lost population during the last decade, the population of the area's only urban center, Glasgow, increased 43.3 percent (an increase of 3,044 persons). Glasgow had approximately 36 percent of Barren County's population in 1960 (Table 4). It would appear that Glasgow is the one growth node of the area. The nonwhite population of these counties was close to the state average of 7.2 percent in 1960, but below the average for the United States.

The level of educational attainment for the adult population of the area compares quite unfavorably with not only the average for the United States but also with the rather low average prevailing for the state of Kentucky (Table 6).

Employment

Although total employment and payrolls increased from year to year during the period 1947 through 1964,[2] some of the counties experienced slight decreases in employment from the 1963 to the 1964 periods,

---

[2] The employment data are for the mid-March period each year; and the taxable payrolls are first quarter of each year.

Table 3. Selected 1959 income data, five-county study area, Kentucky, and United States, 1959 and 1949

Item	Barren	Cumberland	Hart	Metcalf	Monroe	Kentucky	United States
				(dollars)			
Family median income, 1959							
All	2,738	1,898	2,436	1,922	1,856	4,051	5,657
Rural	2,285	1,898	2,436	1,922	1,856		
Rural farm	2,011	1,732	2,087	1,749	1,669		
All family median income, 1949	1,374	839	1,221	921	891	2,037	3,083
1949 in 1959 dollars	1,682	1,027	1,495	1,127	1,091		
Change 1949 to 1959, percent	63	85	63	70	70	62	50
Median income, 1959, males, 14 yrs. & over	1,798	1,032	1,610	1,320	1,217	2,792	4,111
				(percent)			
Families with income less than $3,000 (1959)	54.4	69.0	59.3	68.3	70.4	38.0	21.4
Families with income more than $10,000 (1959)	4.7	2.4	4.1	3.0	3.0	8.0	15.1

Source: County and City Data Book 1962, Bureau of the Census, U. S. Department of Commerce, and U. S. Census of Population, 1950 and 1960, Kentucky. Kentucky and U. S. data from Statistical Abstract of the United States, 1962, Table 449.

Table 4. Proportion of population by type of residence, five-county area in South Central Kentucky, Kentucky, and United States, 1960

Type of residence	Barren	Cumberland	Hart	Metcalfe	Monroe	Kentucky	U. S.
				(percent)			
Rural farm	44.3	55.5	58.0	70.8	56.7	18.0	7.5
Rural non-farm	20.1	44.5	42.0	29.2	43.3	37.4	22.6
Urban	35.6	--	--	--	--	44.6	69.9
				(number)			
Total population	28,303	7,835	14,119	8,367	11,799	--	--

Source: County and City Data Book, 1962, Bureau of the Census, U. S. Department of Commerce, Table 2, Items 1-17, Kentucky.

Table 5. Population and population changes, rural and urban, five-county study area, Kentucky, 1930-1960

Year	Barren	Cumberland	Hart	Metcalfe	Monroe	Kentucky	U. S.
1960	28,303	7,835	14,119	8,367	11,799		
1950	28,461	9,309	15,321	9,851	13,770		
1940	27,559	11,923	17,239	10,853	14,070		
1930	25,844	10,204	16,169	9,373	13,077		
				(percent)			
1950-1960	-0.6	-15.8	-7.8	-15.1	-14.3	3.2	18.5
1940-1950	3.3	-21.9	-11.1	-9.2	-2.1	3.5	14.1
				(migration)			
Net loss through civilian migration 1950-1960	3,506	2,528	2,997	2,530	3,764		

Source: U. S. Census of Population, Kentucky, 1930-1960, Bureau of the Census, U. S. Department of Commerce.

Table 6. Educational attainment of the population, 25 years old and over, five-county study area, Kentucky and the United States

Item	Barren	Cumberland	Hart	Metcalfe	Monroe	Kentucky	U. S.
				(percent)			
Median school years completed	8.1	7.2	8.2	7.7	7.7	8.7	10.6
Completed less than 5 years	22.1	29.1	22.1	28.0	27.2	13.8	8.4
Completed high school or better	18.4	12.9	15.1	12.1	13.2	27.6	41.1

Source: County and City Data Book, 1962, Bureau of the Census, U. S. Department of Commerce.

viz. Cumberland and Metcalf counties (Table 7). The largest numerical increases in employment and payrolls occurred in Barren County--the only county with an urban population center. The percentage increases for these counties in OASI covered private sector nonagricultural employment were much larger over the past decade than for either Kentucky or the United States.

In 1960, the proportion of employed persons in manufacturing industries for the five-county study area was approximately 40 percent less than was the case for Kentucky, and about 55 percent smaller than for the United States (Table 8). Similar relationships existed in 1960, when the percentages of the employed persons in white-collar occupations in the study area are compared with Kentucky and the United States.

Approximately 42 percent of the employment in the five-county area was in agriculture in 1960, as compared to 14 percent for Kentucky and 7 percent for the United States. During the 1950 decade, employment in agriculture decreased 36 percent; employment in construction increased 14 percent; employment in manufacturing increased 36 percent (Table 9). The increase in nonagricultural employment, however, did not compensate for the decrease in agricultural employment.

Table 7. Employment and earnings in private nonagricultural industries, Glasgow, Kentucky, labor market area, 1947-1964[a] (Covered employment reported for mid-March)

County	1964[b]	1963[b]	1962	1959	1956	1953	1951	1948	1947
					(numbers)				
Barren	4,673	4,405	4,266	3,522	3,498	3,249	3,311	2,632	2,213
Cumberland	558	574	544	535	374	338	294	312	285
Hart	1,356	1,115	1,098	1,013	1,049	1,147	897	777	847
Metcalfe	420	426	412	430	299	224	137	147	120
Monroe	1,232	1,030	1,024	728	635	618	510	429	403
5 counties	8,239	7,550	7,344	6,228	5,855	5,576	5,149	4,297	3,868
					(taxable payrolls first quarter, thousand dollars)				
Barren	3,619	3,240	2,969	2,188	1,910	1,714	1,488	948	740
Cumberland	359	354	309	238	122	125	102	84	80
Hart	862	746	684	542	444	397	321	208	251
Metcalfe	202	174	153	153	94	75	41	37	32
Monroe	734	538	522	291	229	202	161	100	87
5 counties	5,776	5,052	4,637	3,412	2,799	2,513	2,113	1,377	1,190

---

[a] This table was prepared by Claude C. Haren using County Business Patterns reports of specified employment and earnings under OASI Program. Data from multi-county consolidations allocated to Cumberland and Metcalfe by formulas derived from statistics of Research and Statistics Unit, Kentucky Department of Employment Security, supplemented by reports of 1947 and 1954 Censuses of Business and Manufacturing.

[b] Estimated from R&S, KDES statistics (citation under footnote a).

Table 8. Selected employment data, five-county study area, Kentucky and United States, 1960

County	Barren	Cumberland	Hart	Metcalfe	Monroe	Kentucky	United States
Nonworker-worker ratio[a]	1.72	1.80	1.92	1.84	1.83	1.94	
Percent unemployed - civilian labor force	4.0	4.9	6.9	3.4	5.1	6.0	5.1
Employed persons:							
Percent in manufacturing industries	12.6	12.2	6.0	11.1	13.0	21.2	25.8
Percent in white collar occupations[b]	26.8	23.3	20.5	17.2	19.3	34.1	41.1
Percent working outside county of residence	5.5	4.7	10.1	11.0	5.9	14.0	13.9

[a] Ratio of persons not in labor force (including children under 14) to labor force.

[b] Includes professional, managerial (except farm), clerical and sales.

Table 9. Number of persons employed and percentage employed in each major industry group, five-county study area, Kentucky and the United States, 1960, and selected 1950 employment data

Industry group	1950	1960			
	Five-county area	Five-county study area		Kentucky	United States
		(number)	(percent)	(percent)	(percent)
Total industry employment		23,926	100.0	100.0	100.0
Agriculture	15,651	9,989	41.7	14.1	6.6
Forestry & fisheries		5	a	0.1	0.1
Mining		358	1.5	4.0	1.0
Construction	1,255	1,429	6.0	6.3	5.9
Manufacturing	1,974	2,681	11.2	21.2	27.1
Furniture, lumber and wood		438	1.8	1.9	1.7
Primary metals		15	0.1	1.0	1.9
Fabricated metals		12	a	1.4	2.0
Machinery, excl. electrical		24	0.1	1.6	2.4
Electrical machinery and equipment		24	0.1	2.5	2.3
Motor vehicles and equipment		4	a	0.7	1.3
Other transportation equipment		4	a	0.3	1.5
Other durable goods		56	0.2	1.2	2.1
Food and kindred products		425	1.8	3.2	2.8
Textile mill products		4	a	0.3	1.5
Apparel, etc.		1,448	6.1	2.2	1.8
Printing and publishing		135	0.6	1.4	1.8
Chemicals and allied products		24	0.1	1.4	1.3
Other nondurable goods		68	0.3	2.1	2.7
Railroad and railway express		61	0.3	2.1	1.5
Trucking service and warehouses		207	0.9	1.5	1.4

Table 9 (continued)

Industry group	1950	1960			
	Five-county area	Five-county study area		Kentucky	United States
		(number)	(percent)	(percent)	(percent)
Other transportation		96	0.4	1.0	1.4
Communications		131	0.5	1.1	1.3
Utilities and sanitary		213	0.9	1.5	1.4
Wholesale trade		585	2.4	2.6	3.4
Food and dairy product stores		644	2.7	2.8	2.6
Eating & drinking places		477	2.0	2.5	2.8
Other retail trade		1,985	8.3	9.4	9.4
Finance, insurance, and real estate		310	1.3	3.0	4.2
Business services		28	0.1	0.6	1.2
Repair services		380	1.6	1.5	1.3
Private households		820	3.4	3.1	3.0
Other personal services		655	2.7	2.8	3.0
Entertainment and recreation		123	0.5	0.7	0.8
Hospitals		353	1.5	2.3	2.6
Educational services: government		879	3.7	4.0	3.9
Educational services: private		72	0.3	1.2	1.3
Welfare, religious, non-profit		182	0.8	1.3	1.3
Other professional		282	1.2	1.9	2.5
Public administration		629	2.6	3.9	5.0
Not reported		352	1.5	3.5	4.0

[a] Less than 0.05 percent.

Source: U. S. Census of Population, 1960, Kentucky, Ser. C, Table 85, and U. S. Summary, Ser. C, Table 91; and U. S. Census of Population, 1950, Kentucky.

Unemployment in the civilian labor force is lower, on the average, than in Kentucky and the nation. Conventionally defined unemployment is not, however, the most relevant economic indicator in this area where more than 50 percent of employed males are either farmers or self-employed, nonfarm proprietors. It has long been recognized that economic underemployment is a more relevant concept than is unemployment in circumstances such as this. Widespread and effective use of economic underemployment as an indicator of the adequacy with which an economy is operating has been hampered because rigorous conceptualization and measurement techniques have not been available.

In the past few years there has been a considerable amount of work done in the Area Economic Development Branch of the Economic Research Service aimed at sharpening the concept of and developing measurement techniques for economic underemployment. We define economic underemployment as the utilization of labor for large numbers of persons in such manner that the levels of earnings attributable to labor services are below the levels obtaining for large numbers of persons of comparable income earning capacities and economically relevant values and tastes in some sector, region, or economy (taken as a norm) with which the study population is effectively economically integrated. Using this concept, and taking the median incomes of all U. S. males as a norm, we have made estimates of economic underemployment for the five-county study area. These estimates take the form of percentages of the male civilian labor force. The percentages can be interpreted as the average annual man equivalents of unemployment attributable to economic underemployment. The percentages can, of course, be converted to numbers, and both percentages and numbers are additive with those for conventionally defined unemployment. The results for the Glasgow trade area counties are shown in Table 10.

We invite attention to the fact that the norm with which we have compared this local trade area is not high. It is the median income for all males, 14 years of age and over in the United States. It therefore, takes full cognizance of (that is accepts as normal) the underutilization of labor and such general economic slack and inefficiency as prevailed in this economy of the United States circa 1959. A further fact to be considered in this connection is that our estimates of the unemployment equivalent of economic underemployment are derived in such manner as to exclude those who are not in the labor force because they think (or know) that there is no employment available--these are sometimes referred to as the "hidden unemployed."

In addition, we have added an arbitrary downward adjustment of 15 percent for the males of our five-county area, relative to all U. S. males, to take cognizance of the fact that a significant income/wage cost differential

Table 10. Male labor force, five-county study area: Working data for estimating unemployment equivalent of economic underemployment, 1959

Line No.	Item	Unit	United States	Study area counties					
				Total	Barren	Cumberland	Hart	Metcalfe	Monroe
1	Median income, males 14 yrs. & over, 1959	Dollars	4,111	---	1,798	1,032	1,610	1,320	1,217
2	Adjustment factors: Education[a]	Percent	100.0	---	75.5	69.8	75.1	68.1	71.3
3	Age distribution and proportion nonwhite[b]	Percent	100.0	---	98.5	96.1	95.3	97.4	95.8
4	Proportion of those with income who are in labor force[c]	Percent	100.0	---	90.5	90.0	89.8	90.6	91.1
5	Employment status of the labor force[d]	Percent	100.0	---	102.1	102.2	101.2	102.5	102.2
6	Product of adjustment factors[e]	Percent	100.0	---	68.7	61.7	65.0	61.6	63.6
7	Median income representing equivalent reward for labor of comparable earning capacity[f]	Dollars	4,111	---	2,824	2,536	2,672	2,532	2,615
8	Actual median ÷ equivalent median[g]	Percent	100.0	---	63.7	40.7	60.2	52.1	46.5
9	Civilian labor force	Number	---	18,607	7,361	2,058	3,734	2,288	3,166
10	Estimated unemployment equivalent of economic underemployment given full equivalence of earnings[h]	Percent	000	43.9	36.3	59.3	39.8	47.9	53.5
11		Number	000	8,168	2,672	1,220	1,486	1,096	1,694

Table 10 (continued)

Line No.	Item	Unit	United States	Study area counties					
				Total	Barren	Cumberland	Hart	Metcalfe	Monroe
12	Estimated unemployment equivalent of underemployment allowing 15 percent less than equivalent reward for comparable labor[i]	Percent	---	34.0	25.1	52.1	29.2	38.7	45.3
13		Number	---	6,329	1,848	1,072	1,090	885	1,434

[a] The percentage of males twenty-five years of age and over, in each county, having completed 0; 1-4; 5-7; 8; 9-11; 12; 13-15; and 16 or more years of schooling were weighted by the national median income for males 25 years of age and over having the same levels of education. This adduced median for each county group was then expressed as a percentage of an adduced median for the United States obtained in the same manner.

[b] For each county the percentages that age groups of white and of nonwhite males were of all males were weighted by the national median income for males of the appropriate age and color. By this procedure an adduced median was developed that would obtain for the county if its males had incomes comparable to the median for persons of the same age in the United States as a whole. This adduced median income for each county was expressed as a percentage of an adduced U. S. median obtained by the same procedure as that used for each county. The age groups weighted by national median incomes were: 14-15, 16-17, 18-19, 5-year intervals from 20 through 34, and 10-year intervals from 35 to 75 and over.

[c] The percentages of county males 14 years of age and over and with income who were and who were not in the labor force were weighted by the national median income of males with income who were and who were not in the labor force. This adduced median income obtained in this manner was then expressed as a percentage of an adduced national median obtained in the same manner as for the counties.

[d] The percentages of each county's male labor force who were employed civilians, unemployed, and in the Armed Forces were weighted by the national median incomes of males in the same employment status. The adduced county median incomes developed in this manner were expressed as percentages of adduced national medians obtained by using the same procedure.

Table 10 (continued)

---

[e] The product of line 2 x line 3 x line 4 x line 5.

[f] The product of $4, 111 (the median income of all U. S. males) multiplied by the product of adjustment factors (line 6)

[g] Line 1 ÷ line 7.

[h] The difference between 100. 0 and the percentage shown for each county on line 8. The percentage for the 5-county area was obtained by adding the numbers for the counties and dividing this sum by the total labor force for the area.

[i] The dollar figure on line 7 for each county was reduced by 15 percent to obtain a lower "required median income." The actual median (line 1) was then divided by this new lower "required median." The percentages for counties on line 12 represent the differences between 100. 0 and the percentage that actual median incomes (line 1) are of median incomes 15 percent lower than those shown on line 7. The percent for the 5-county area was obtained by summing the numbers on line 13 for each county and dividing by the total labor force for the area.

is needed to encourage both mobility of the labor force and investments in the area to provide employment.

We suggest, therefore, that ours is a conservative estimate of underemployment. If this be the case, there is considerable significance to the statistic of Table 10 which indicates that 44 percent of the male labor force of this five-county area would need other employment if they were utilized at a level of efficiency comparable to that obtaining, on the average, for males of equivalent income earning capacity in the United States as a whole. Even after we arbitrarily determined that labor of comparable earning capacity should in this five-county area have median incomes 15 percent less than the U. S. average (in order to promote mobility and investment), our estimates indicate an unemployment equivalent of underemployment equal to 34 percent of the male civilian labor force.

Development Needs and Potentials

To this point, we have sketched a picture of an area with chronically low incomes and we have suggested that these incomes cannot by any means be explained by differences in the earning capacity of the labor force. The labor force is, rather, very badly underutilized.

In the course of quantifying the extent of underemployment we have also indicated the relative importance of some factors which result in and "justify" lower incomes for employed males in this five-county area. These are the various "adjustment factors" of Table 10. Low levels of education are by all odds the one most important cause of "justifiably" lower incomes to males of this area.

To make the median incomes comparable to the U. S. average, it would be necessary to raise median incomes of males in these five counties (after allowing for differences in earning capacity, and for an arbitrary downward differential to promote mobility and/or local investment) by percentages ranging from 34 to 109 (Table 11).

Productivity and incomes can be improved in agriculture, but it is apparent that the study area cannot maintain its present population nor increase incomes appreciably by just improving agriculture and maintaining its present nonagricultural structure. In fact, improvements in agriculture would require further decreases in agricultural employment since productive land is limited.

An additional problem is that as a result of years of relatively low incomes, local governments in these counties have had serious problems

Table 11. Percent median incomes of males 14 years of age and over, in study area counties would have to be raised to reflect rewards equivalent to those obtaining in the United States as a whole for males of comparable income earning capacity

Item	Study area counties				
	Barren	Cumberland	Hart	Metcalfe	Monroe
			(percent)		
Full equivalence of earnings for labor of comparable ability	57.1	145.7	66.0	91.8	114.9
15 percent less than full equivalence of earnings for labor of comparable ability	33.5	108.7	41.2	63.2	82.7

in maintaining satisfactory levels of social overhead investments. This places the area at a disadvantage in competing with more affluent areas for the new industry that might locate in the general region.

A recent study of this five-county area can shed some light on its development potentials and problems. The study was concerned with estimating the effects on income and employment that can be expected from additional public and private investments.[3] A highly disaggregated linear programming model was used. Consideration was given to the present levels of capital available in the area, the nature of the labor force, levels of management and technology now used in the area's agriculture, as compared with levels of management, technology, and farm organization that the Kentucky Agricultural Experiment Station considered necessary for desired levels of profitability; the area's experience with industry and its access, etc.

Linear programming models can be used to determine (a) the amount of outside financing needed to meet the increase in income and consumption adapted as the targets for a given development plan; (b) the mix of new manufacturing and agricultural activities that would cost the least in outside financing; (c) the techniques or production to employ in those cases where alternative techniques are available; (d) the amount of technological change required in existing sectors, especially agriculture; (e) the amount of labor by level of skill required for a particular development plan; (f) the amount of local capital formation that is required; and (g) variations in the cost and content of the plan that result from varying the assumptions concerning out-migration.

---

[3] The details concerning methodology, the planning targets, assumptions concerning investments, and the like are presented in U. S. Department of Agriculture Technical Bulletin No. 1339, March 1965. A 10-year development period was used in the study.

Flexibility was provided for in the model by including alternative economic activities that may be selected in the solution to satisfy the basic requirements (constraints). The model used in the five-county area study uses the highly disaggregated form of the technological matrix, and includes alternative technologies, alternative scales, and joint products. In addition, the model has endogenous determination of the level of imports. In small underdeveloped areas, labor is considered as a major limiting resource; therefore, careful consideration was given to the consistent projection of the labor force constraints.

The inclusion of activities to import and export labor in different seasons made possible the calculation of labor shortages and surpluses at competitive wage rates. This procedure provides an important internal check on the feasibility of development planning for the region.

The flexibility of linear programming techniques allows one to study the effects on the development program of variations in the parameters of the model. For example, variations in export constraints will show changes in the foreign exchange cost of a given program; variations in consumption targets will show the differences in programs necessary to meet these targets; and variations in competitive wage rates will show what industries are most sensitive to wage shifts.

We believe the planning model used in the five-county area to be especially useful for economic planning in small, low income, rural regions having the following characteristics: (1) The region is not expected to become capital goods producer, rather, most capital goods required for industrial expansion will have to be imported; (2) agriculture occupies a dominant position in the region's economy; and (3) an exceptionally large proportion of the region's labor force is unskilled.

The model as applied to the five-county area consisted of 339 real activities, viz., 62 manufacturing production activities; 32 agricultural production activities; 13 agricultural conversion activities; 15 other production activities (including local services, construction, government, labor training); 129 export activities; and 88 import activities. Of the 32 agricultural production activities, 18 represented separate agricultural processes, and 14 represented variations in scale or level of efficiency. Approximately 115 commodities (representing goods and services, capital, and labor) were used in the matrix as the inputs and outputs of the production activities.

The principal goal of the development program was to increase real per capita income by 69 percent (from $1,000 in 1960 to $1,740 in 1970). The per capita income goal was estimated at 70 percent of the 1970 per capita income in the United States. This level was selected for the five-county area goal, because this is the relative position of Kentucky currently, and has been Kentucky's position for the past decade.

In general, the industry composition of the program showed considerable stability. The six major manufacturing complexes, the five new agricultural complexes, and seven conversions--all of which were included in the basic solution--were also included in the other six runs.[4]

The six manufacturing complexes were: (1) hand tools, (2) apparel, (3) lumber and wood products, (4) concrete products, (5) food processing of crops, (6) food processing of dairy products.

The five agricultural complexes were: (1) tobacco, (2) truck crops, (3) dairying (manufacturing milk), (4) hog raising (raising of feeder pigs and market hogs), and (5) other crops (soybeans, hay, and pasture). Two sets of agricultural activities that were included in the model, but did not enter any of the solutions, are poultry and cattle and calf production.

Varying some of the major parameters, such as wage rates, did not significantly alter the composition of the optimum program. This stability factor serves to indicate that the general composition of the program was focused in the right direction and increases our confidence in the program results.

An operational solution of the model obtained in this particular study provided key information about the prospects and potentials of development in the five-county study area. The characteristics for this particular program were as follows: (1) Consumption targets were for a population target of an increase of 11,560 persons based on a net out-migration of zero in each age group. This was the largest population increase specified in the four alternative population targets that were to be tested, with a development program designed for each. Financial limitations only allowed the analysis of the above development program. (2) If labor had to be imported, rates were $10,000 for managers, $6,000 for clerical and skilled, and $3,000 for unskilled workers. (3) Seasonal use of unskilled labor was provided for. (4) Other specific targets and constraints in this program concern consumption (1970 per capita consumption = $1,440), government services, roads, housing, export demand, local labor availability, and natural resource use.

---

[4] Detailed presentation of the results of the computer runs may be found in U. S. Department of Agriculture Technical Bulletin No. 1339.

The outside capital required for a development program for the five-county study area was not considered to be excessive. In order to implement a program designed to raise incomes in the area by $48 million, equivalent to a per capita rate of 5.6 percent per annum, fixed investment by outside agencies (i.e., public and private) of $37 million would be required for the total ten-year development program. In addition, the outside investment is expected to bring about local capital formation of $71 million. These relationships are acceptable. On the other hand, the annual deficit in the foreign exchange balance on current account for goods and services of about $15 million is high. The results of the program indicate that self-sustaining growth would not be achieved by the end of the 10 years.

The above conclusion does not mean that there is no hope for the study area. It means that efforts must be made to alter the selected development program in the direction of a lower deficit in the foreign exchange balance on current account. There may be export possibilities not investigated in this particular economic planning model. As a result, the solution may tend to overstate the balance of imports over exports on current account. It is possible also that the study area could achieve a self-sustaining growth rate less than the original goal of 5.6 percent, but considerably above what it is presently experiencing.

It is generally true however that within a dynamic, technically mature, overall economy with relatively high levels of capital and labor mobility, such as that of the United States, not all localities, or arbitrary groupings of localities can expect to attain economic growth in the sense of increasing or even maintaining population while increasing real income per person in the labor force. The results of the study reported here do not say that the people of this area cannot make progress toward (1) achievement of increased real income per person in the labor force, and (2) attainment of real returns comparable to the U. S. average for the economic use of equivalent resources.

The most important implication of the results here reported would appear to be that these five counties do not constitute a viable area for planning economic development in the sense of attaining, in a reasonable period, economic growth that will permit progress toward the two goals mentioned above, and halt all out-migration of population. In short it is indicated that for planning economic development this area needs to be considered in conjunction with other contiguous areas, which would together with the study area possess characteristics necessary to take care of population growth as well as returns to factors substantially closer to the U. S. average for equivalent resources. Small areas (and there would be many large ones too) in the United States that could not meet these two conditions are probably legion.

We must therefore, never lose sight of the supreme importance to all areas of a high and improving level of performance on the part of the U. S. economy as a whole, for so long as the overall economy is expanding at a rate greater than the population increase all areas can at least achieve improved income levels.

Our five-county area is presently making some progress in improving its position relative to the United States and Kentucky, but slowly. It seems probable that economic planning in a broader areal framework assisted by the insights that can be provided by models such as we have sketched could speed up the process of improvement.

A CASE STUDY OF SIX CENTRAL WEST VIRGINIA COUNTIES OF THE INTERRELATIONSHIPS OF FACTORS LEADING TO PERSISTENCE OF LOW INCOMES AND UNEMPLOYMENT IN THE AREA

O. C. Stine, Consultant, and Members of Staff
Department of Agricultural Economics and Rural Sociology
West Virginia University

The Six Central West Virginia Counties Pilot Study Area

The Six Central West Virginia Counties are generally recognized as being economically depressed in the center of a state so depressed that out-migration and unemployment continue at a high rate in spite of a rapid rate of national growth and high level national prosperity. It seems necessary to review briefly the present conditions and trends in the area and in the state to point the ways out.

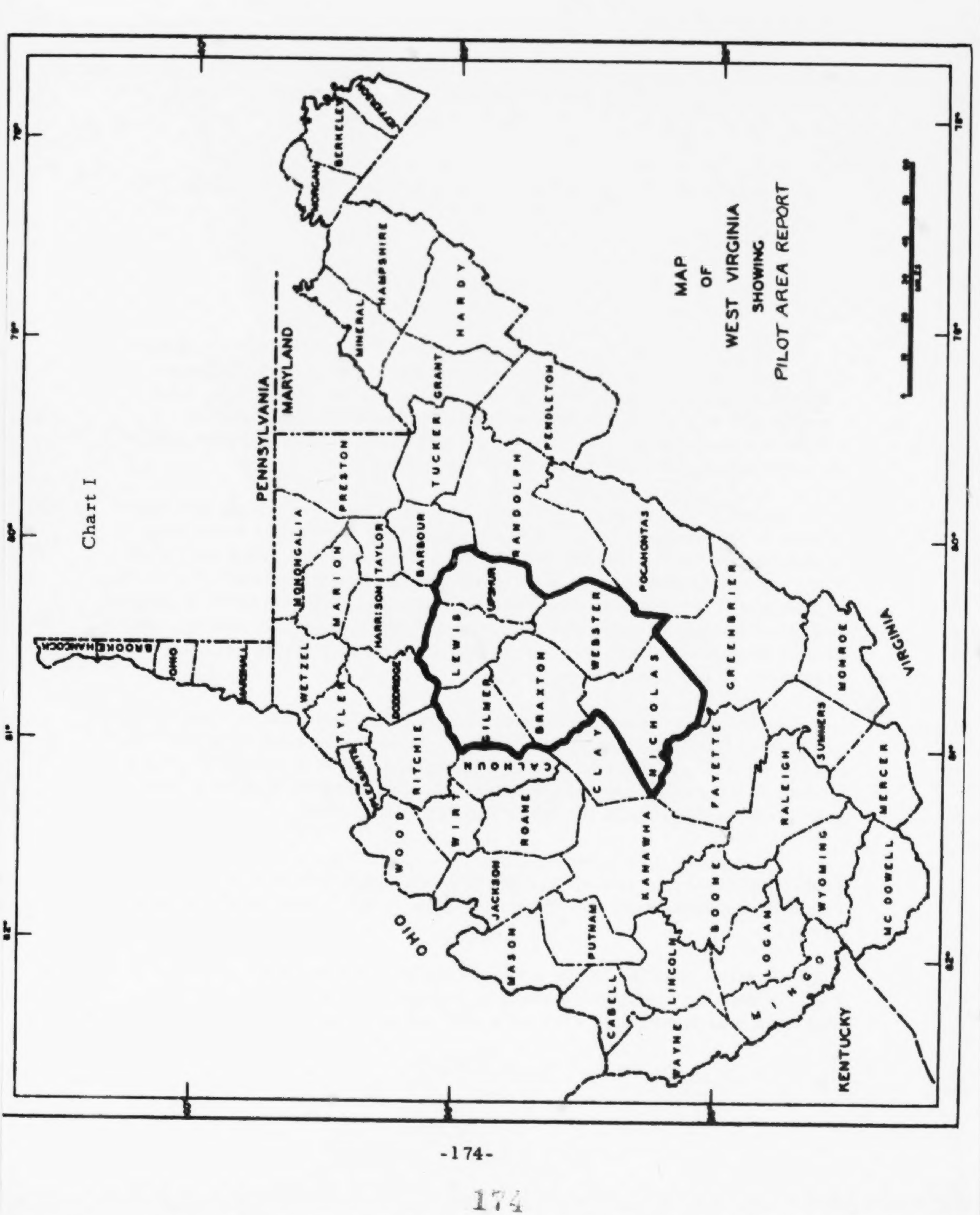
Briefly, and in general terms, the ways out to catch up and contribute to the national growth include upgrading the human resources in the area through schools and other institutions; improving and developing the use of the natural resources through available technology with adjustments in use to meet increasing demands; and improving highways and other means of communications so as to facilitate not only the outflow of products but also the inflow of people to utilize the recreational resources of the area and the state.

Long-run substantial investments in this area from the outside are essential to step up growth from the bottom of the depression. The people outside will gain from the investments, flood protection, greatly increased recreational opportunities, and an improved source of manpower and leadership in the state and national affairs.

To support these conclusions, or hypotheses, if you prefer, it seems necessary to review briefly present conditions with the most recently available data and trends pointing in the direction of potential growth.

The six counties in the central part of the state were selected in 1962 by the University for a study of redevelopment problems. The objective was to use this area as a case study of how to develop the best

Chart I



MAP OF WEST VIRGINIA SHOWING PILOT AREA REPORT

PENNSYLVANIA
MARYLAND
OHIO
KENTUCKY
VIRGINIA
HANCOCK
BROOKE
OHIO
MARSHALL
WETZEL
MONONGALIA
MARION
PRESTON
TAYLOR
BARBOUR
TUCKER
GRANT
MINERAL
HAMPSHIRE
HARDY
MORGAN
BERKELEY
JEFFERSON
PENDLETON
RANDOLPH
POCAHONTAS
UPSHUR
HARRISON
DODDRIDGE
TYLER
PLEASANTS
RITCHIE
LEWIS
GILMER
BRAXTON
WEBSTER
NICHOLAS
GREENBRIER
MONROE
CALHOUN
CLAY
FAYETTE
SUMMERS
MERCER
RALEIGH
WIRT
ROANE
WOOD
JACKSON
KANAWHA
BOONE
WYOMING
MC DOWELL
MASON
PUTNAM
LINCOLN
LOGAN
MINGO
CABELL
WAYNE
MILES

utilization of available resources to provide higher incomes and better living conditions for the people in a rural area.

The method of operation chosen was to select a panel of informed specialists, in several fields, including economists and sociologists, a political scientist, and a conservationist, to meet with members of the University Staff, state and federal officials concerned with the resources of the area, and to invite representatives of the people in the several counties to join in a conference as to the problems of the area. The panel conducted hearings and adjourned for a period to consider the problems in relation to resources, and to formulate suggestions for the better use of resources. A preliminary report was formulated and the panel returned to a reassembled conference at a later date with a draft of a proposed report. This was submitted subject to criticism and suggestions for revision. After this second hearing the preliminary report was converted into a final draft for publication.

This procedure was designed deliberately to bring together representative local leaders of the several counties to consider the problems and resources they have in common, and to suggest joining in development programs that necessarily extend beyond county limits.

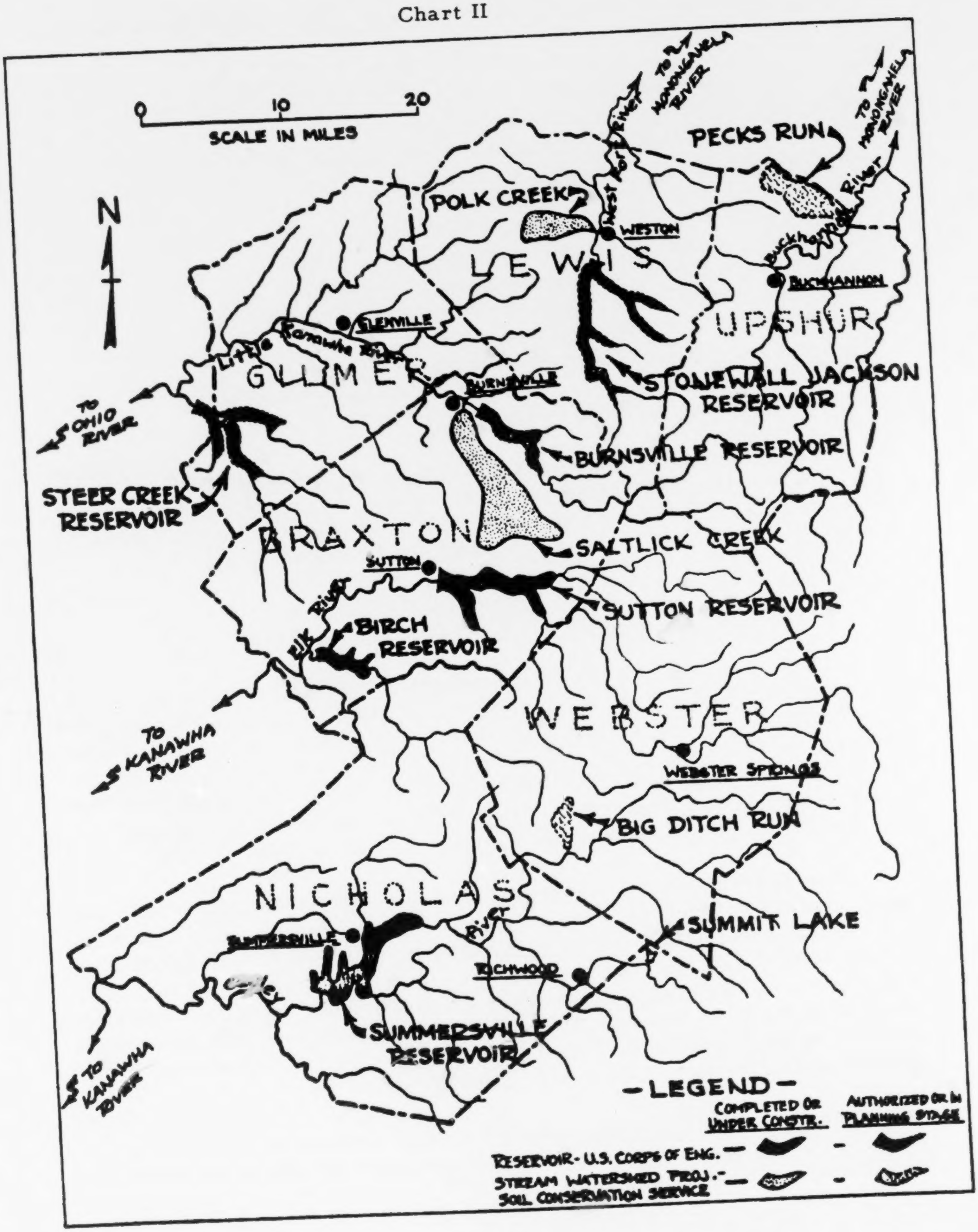
The Location and Resources of the Area

These six counties are in the geographic center of the state. They occupy portions of a high Allegheny Plateau with elevations varying from 675 to 4200 feet. The plateau is dissected by a close network of streams. The valleys are V-shaped, with steep slopes between narrow mountain ridges and narrow alluvial bottom lands. There is very little level land in the entire area. The streams flow out in many directions, mostly into the Monongahela and into the Little and Big Kanawha Rivers.

The average annual precipitation in the area is the heaviest in the state, averaging from 48 up to 56 inches. Water rushes down the slopes and streams toward the rivers with heavy erosions of soil where it is not protected by forests or permanent grass cover. There are no natural lakes and ponds in the area. A large artificial lake, however, has been created at Sutton in Braxton County by a dam to impound and slow up the rush of water downstream. Another such dam is under construction at Summersville in Nicholas County on the Gauley River.

Such reservoirs not only serve as flood protection and the conservation of water for dry seasons, but also provide for the development of additional recreation centers.

Chart II


0
10
20
SCALE IN MILES
N
TO MONONGAHELA RIVER
West Fork River
TO MONONGAHELA RIVER
PECKS RUN
Buckhannon River
POLK CREEK
WESTON
LEWIS
BUCKHANNON
UPSHUR
GLENVILLE
Little Kanawha River
GILMER
BURNSVILLE
STONEWALL JACKSON RESERVOIR
TO OHIO RIVER
BURNSVILLE RESERVOIR
STEER CREEK RESERVOIR
BRAXTON
SALTLICK CREEK
SUTTON
SUTTON RESERVOIR
Elk River
BIRCH RESERVOIR
TO KANAWHA RIVER
WEBSTER
WEBSTER SPRINGS
BIG DITCH RUN
NICHOLAS
SUMMIT LAKE
SUMMERSVILLE
River
RICHWOOD
Gauley
SUMMERSVILLE RESERVOIR
TO KANAWHA RIVER
-LEGEND-
COMPLETED OR UNDER CONSTR.
AUTHORIZED OR IN PLANNING STAGE
RESERVOIR - U.S. CORPS OF ENG.
STREAM WATERSHED PROJ. - SOIL CONSERVATION SERVICE

The mountains are extensively covered with forests. The Monongahela National Forest extends into Webster and Nicholas counties. The state has converted some forest land into parks, and hunting and game reserves. Forest growth has reoccupied much of the farmland no longer grazed or cultivated. Consequently, forest growths now occupy about 73 percent of all the land in the six-county area. The area of land remaining in use by the farmers for grazing livestock and harvesting crops has been reduced to relatively small segments of the total land area, amounting to about 27 percent of the total land area.

Minerals is one more natural resource item to be taken into account. Coal mining, and oil and gas well installations are scattered about on the landscape. A great volume of coal and immeasurable supplies of oil and gas are stored under these mountains.

Human Resources

The population count in 1960 was 100,338 in the six counties. This was about 5 percent of the population occupying about 12 percent of the area of the state. There are no large cities in the area. Weston reported the largest number of people, 8,754, Buckhannon, 6,386, and Richwood, 4,110. Most of the people live in small villages and along the connecting roadsides. Few live in isolation in the hollows among the mountains.

Secondary schools and colleges are available within easy reach for all youths who aspire to more than an elementary education. One state supported college is located within the area; another is in an adjoining county. One denominational college also is within the area and another is across the line in the next county. Any youth who wishes has not far to go in travel from grade school through high school to college.

The educational attainment of the people in the area, however, lags that of the national average. The majority have not passed beyond the grade school, whereas in the nation the majority have gone into high school and beyond (comparative data will be presented later).

The lag in the economic conditions in the area in relation to national prosperity since the second World War is reflected in local elementary and secondary schools. By modern standards there are too many one-room elementary schools and too many small high schools for the efficient use of teachers in the elementary grades and for more diversified course opportunities in the secondary schools.

Hospitals and medical services are limited. A state mental hospital is located at Weston and there are ten general community hospitals in the area. The physicians are about one to 2000 inhabitants. The people in some counties complain of the scarcity of nearby doctors and dentists and of the need of better hospital services for emergency cases.

Banks and financial resources also are limited. Local banks and other financial institutions are capable of providing necessary financial services for the nearby communities, but not for major industrial projects and long-run improvements.

In transportation the terrain of the area is a handicap to the economic and social development of the area. Main railway lines pass by, north and south, extending branches in to pull out coal and forest products but without providing passenger service. Many secondary highways threading through the valleys and occasionally crossing over the higher ridges from valley to valley have been black topped, but they are narrow, very crooked and with many steep grades. They are hazardous in winter and always costly for heavy truck transportation.

The economic depression was registered in reductions of employment, out-migration, reduction in labor force, a high rate of unemployment, increased relief rolls, and of reduction in population with a lag in family incomes in relation to national growth.

The depression was primarily the result of unfavorable adjustments following the second World War and can be observed as reflected in census records for 1959-1960 in relation to the records of the census of 1949-1950.

Summarizing briefly:

Employment	-21.4 percent
Out-migration	-27.1 percent
Civilian labor force	-18.4 percent[1]
Unemployment	+12.0 percent
Relief allocations	+59.3 percent
Population	-11.8 percent

The family incomes in 1959 were higher, excepting in one county, than the incomes reported in 1949, adjusted to the same value level. Family incomes were low in 1949. Out-migration of some of the lower income families and higher wages for those workers who remained lifted the average income of the area. Even the income of farm families was lifted to some extent.

---

[1] An estimate as of mid-year 1962, based on a survey by the West Virginia Department of Employment Security.

The median of all family incomes of those who remained had increased, but continued near "the poverty level."[2] The "poverty level" was indicated in the recent economic report of the President to be $3000, the minimum current income needs of a typical poor family.

Table 1. Median family incomes, 1949-1959

Item	All families		Percent	Farm	Percent
	1949	1959	change	1959	of all
	(dollars)			(dollars)	
State	3179	4572	44	2841	62
Counties:					
Braxton	1627	2610	55	1843	40
Gilmer	1810	2719	50	2283	50
Lewis	2268	3503	54	2729	60
Nicholas	2814	3507	25	3134	69
Upshur	2039	3256	60	2609	57
Webster	2576	2476	-4	2045	45

Source: Median Family Income, pp. 82-83, Statistical Bulletin No. 339, Economic Research Service, U. S. Department of Agriculture. Data were taken from the Censuses of 1950 and 1960.

The percent of families with income less than $3000 in 1959 were as follows:

Webster	57.7
Braxton	55.0
Gilmer	54.7
Upshur	46.7
Nicholas	43.3
Lewis	43.2

Thus the census records for 1959 indicate the relation of the median family incomes to "the poverty level" as defined in the annual report of the President.

---

[2] Economic Report of the President, January, 1965, p. 162.

Employment Shifts and Trends

Employment in the area had increased from 1949 to 1950 but as indicated above had declined sharply in the course of the postwar adjustments. Grouping fields of activity the census records show significant shifts and trends. Employment in all fields, excepting agriculture, forestry, and some services, had increased and held up to 1950. The great reductions from that point to 1960 were registered in the natural resources, transportation, and some of the services; while increases were registered in other fields of activity (see Table 2).

Table 2. Area employment trends, 1940-60

Industry group	1940	1950	1960	Percent change, 1950-60
Total employed	26,859	32,006	25,170	-21.4
Agriculture	10,587	7,426	2,361	-68.2
Mining	2,571	7,798	4,645	-40.4
Forestry and products[a]	1,978	1,852	1,508	-18.5
Construction	1,116	1,509	1,526	1.1
Manufacturing[b]	1,308	1,694	1,939	14.5
Transportation	891	1,320	1,029	-22.1
Trade	2,247	3,498	4,294	22.8
Utilities[c]	506	616	915	48.5
Services	2,142	1,971	1,551	-21.3
Education		1,651	2,064	25.0
Hospitals		705	944	34.2
Public administration	724	773	810	4.8
Finance, etc.	195	244	349	43.0

[a] Forestry and manufacturing of wood products.
[b] Other than lumber and wood.
[c] Communications, utilities, and sanitary service.

Source: Report of Panel for Six Central West Virginia Counties, Table I, page 31, FES, USDA, August 1962. Rearranged.

Why the great reduction in employment in the use of the natural resources and in transportation? In perspective it may be suggested that the most important factors were: the nature of the terrain, competition in the national market of products from other areas, shifts in demand, technological changes in operations, and interdependent working relations among those several fields of activity.

As to working relations consider the course of development among the several fields. Farming had been the leading occupation for a long time. At first the trees had been an obstacle to crops. Later with more people moving in, and the extension of railroads into the area, the trees became a valuable source of income. The timber had also provided fuel, but with the coming of the railroads and the development of villages and towns, outlets for the marketing of the coal developed. The cutting of timber for ties and lumber became important off-season job opportunities for some of the occupants of the farms. Some became miners and others went to work on the railroad. A high level of employment had been reached in all these fields during or following the second World War. And when the tide turned they all went down together. Other factors in the decline in each field will be dealt with separately in trends from 1940 to date, and prospects for the future.

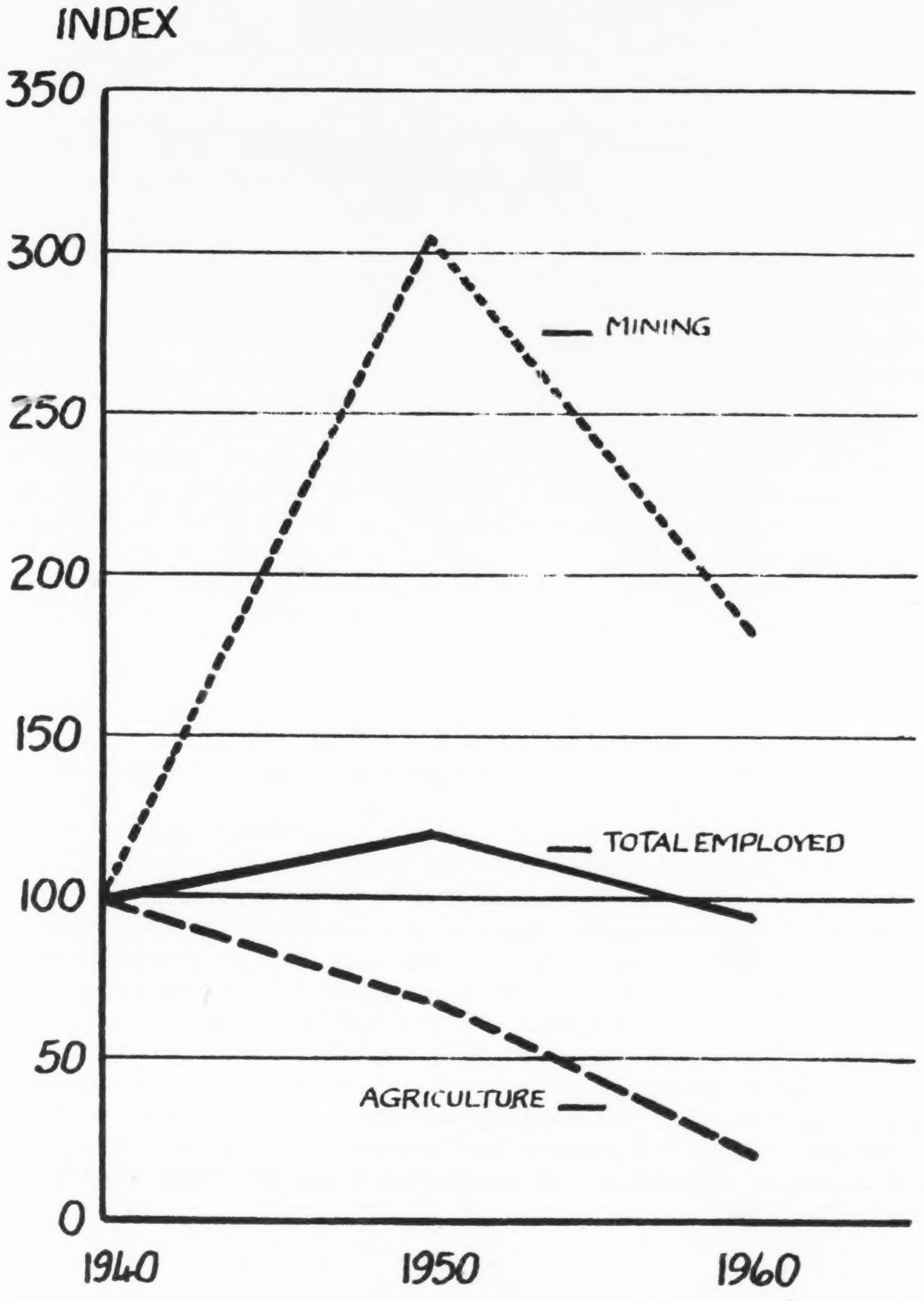
The agricultural landslide in employment began early in the years following the entrance of the nation into preparation for joining the Allies in the second World War. Men were recruited or drafted from the farms. Emergency needs for lumber for construction and coal for fuel for the railroads and factories also drew men from the farms. Shifting from horse power to tractors in cultivating and harvesting crops released manpower for the army, or for employment in the forests, mines and factories.

The great depression in the early 30's had returned to the farms many men who had gone into the factories for jobs after the first World War. Consequently, there was surplus farm labor on farms in 1939. The census of 1940 recorded more farms and farmers than in 1930.

The agricultural employment in the area had been reduced 30 percent by 1950. So many workers had shifted to the coal mines that employment in that field had trebled. Employment in the forests and on the railroads had also increased. Some of the cropland had been abandoned to return to brush or forest. Much of the harvested cropland had shifted from the hillsides to areas that could be cultivated and harvested with tractor machinery. The number of farms had been reduced by 22 percent. The total employment in the area, however, had been increased by 15 percent, distributed among the several other fields of activities, including mining, manufacturing, railroading, and trade. The population of the area had declined by 2.3 percent but there was no large pool of unemployed workers. The state rate was 4.8 percent, the same as that of the nation in 1950.

Chart III

EMPLOYMENT - SIX COUNTY AREA
1940 - 1960
TOTAL - AGRICULTURAL, MINING



The downward trend in agricultural employment continued, and at a more rapid rate as indicated above, from 1949 to 1959. Reductions in the off-farm opportunities for members of the farm family in the mines, forests, and on the railroads contributed to a significant extent to the flight from the farms. Mechanization reduced to some extent the labor requirements upon some of the farms that remained in operation. The agricultural adjustment programs encouraged shifts from cultivated crops to hay and pasture. Competition from the products of other areas more favorable for producing grain crops and some livestock products limited the market outlets for the local producer. These factors in combination reduced greatly the area of land remaining in farms, the number of farms, and caused significant changes in the use of the land remaining in farms.

Summarizing briefly, the most significant agricultural changes in the area from 1949 to 1959 were the number of farms reduced by 43 percent, but the average size of the farm increased by 28 percent, and the value of products sold per farm by 84 percent.

Proposals for raising farm incomes in the area include:

(1) increasing the productivity of the land suitable for crop cultivation and pasture up to the line of preference for growing timber,

(2) improving and adjusting livestock production in line with the best use of the land in relation to market demands,

(3) enlarging farms to the extent that the availability of suitable land and the capacity of operators can be demonstrated,

(4) assisting and encouraging farmers remaining on the smaller farms to make the best use of the land they occupy and to obtain off-farm jobs for available members of the family to supplement the income from the farm.

Observations and experience indicate that the productivity of the farmland could be increased greatly by more extensive and intensive applications of lime and fertilizers on crops and pastures. The cost sharing programs in conservation have contributed to some extent in improving conditions but the extent of application on this account is too limited for the job to be done. The last census indicated that only 8 percent of the hay and crop land pasture, 2 percent of the other open pasture, and less than half of the corn plantings had received fertilizer the previous year. More farmers need technological advice, training or demonstrations as to how much it pays to fertilize pasture as well as crops to be harvested.

Significant progress in upgrading livestock production has been registered in recent years through dairy herd testing and the artificial breeding of dairy cows, and the demonstration grading sales of hogs, sheep and beef cattle. The continuation or the extension of these operations to include more concentration on productivity in relation to feed and pasture resources could continue to contribute significantly to increasing farm income in the area.

The trends in livestock production in relation to land use have been to maintain the production of those primarily dependent upon pasture and hay, beef cattle and sheep, and to reduce the number of hogs more in line with the reduction in grain crops. The great reduction in grain crops has reduced the supply for feeding hogs and dairy cattle with the local markets for their products limited by outside competition. The beef cow herds to produce feeder calves requires relatively small quantities of grain or other feed concentrates. The demand for the feeders comes from feed in surplus corn producing areas, and there is an upward trend in the national market demand for beef which is an encouraging prospect for the future.

The dairy enterprise falls between the primarily grain fed and the extensive area grazing animals. The number of cows kept for milk has been declining with the reduction in harvested crops, but production per cow has been increased by upgrading the dairy herd and by technological improvements in feeding and in the handling of the milking. Restrictions on the conditions required for producing grade A milk and competition from other areas, however, limit the volume produced in this area.

Beef cow herds for producing feeder calves appears to be emerging as the one farm enterprise with comparative advantages on the blue grass covered slopes of the area. Consequently, there has been an upward trend in the number of cows kept for breeding beef stock through the last ten years.

Most of the farms are too small for efficient production. A recently published study indicates that for most types of farms annual gross sales of $10,000 or more were required to make reasonable returns to all factors of production.[3]

---

[3] Anthony L. Pavlick, "Toward Solving Farm Income of Small Farmers," 1964, p. 20.

In 1959 only 100 farmers, less than 2 percent, in this area reported the values of products at $10,000 and over. The great majority, 89 percent, reported values less than $2,500. Many of these operators have or will drop out by the end of the present decade. In doing so, they can contribute to the opportunity of some of the better managers to enlarge their farms into more adequate enterprises.

The most significant use of the small farm to the majority of the owners is that of a place to live. Many are 65 years of age and over and have some other source of income. Another large group are only part-time farmers with other employment, 100 days or more, or have family income from other sources in excess of the value of farm products sold. A few under 65 years of age seem stranded without many job opportunities and no other significant sources of income. For many such people a small area of farmland usable for a garden and the keeping of a few animals around a livable house may be a valuable supplement to other sources of income, including public relief assistance.

In conclusion, the trend indicates that employment in agriculture is likely to continue downward through 1969. The adjustments in the use of farmland to the terrain and the use of machinery may be slowing up since the adjustments to date have exceeded the adjustment goal of the Conservation Service indicated for 1975. However, currently progressive programs for increasing the productivity of pasture and crop land, and upgrading livestock products can contribute in the future to up-trends in farm income. The Forest Service has estimated that as of 1961 the commercial forests have occupied 73 percent of the land area of the six counties.

Mining - Mineral Fuels[4]

Large reserves of coal and natural gas with some oil can provide the basis for growth in the future mineral economy of the area.

Bituminous coal is the most valuable mineral resource. Some twenty billion tons of minable coal comprised the original reserve. Production to date totals only about two hundred million tons. So a great stock of coal remains to be drawn upon in time as economic conditions demand it.

---

[4] Quoting in part and based largely upon Statement by Paul H. Price, Director and State Geologist, West Virginia Geological and Economic Survey, the Panel Study, 1962.

While the reserves of natural gas and oil have not been determined, recent explorations with the more extensive use of technological developments are finding increased potential supplies.

Coal Mining Employment and Production

Coal mining employment and production was at a low level in the area in 1940, but had expanded at a rapid rate up to 1950. Most of the production in 1940 was in Webster County, but by 1950 Nicholas had taken the lead; with Upshur coming up. Later Webster dropped behind with Nicholas remaining in the lead, and a new mining operation coming into Gilmer County with substantial production. Coal is produced in each of the counties by stripping, auguring and underground mining.

Year	Employment (numbers)	Production (thousands of tons)
1940	2571	1179
1950	7798	5802
1960	4645	8129
1962	4270	8966
1963		9237

Production has been maintained and even increased since 1950 with a great reduction in employment as a result of increasing the use of machinery and technological development greatly increasing productivity per man. The year output per employee in 1940 was only about 460 tons; by 1950 the output was more than one and one-half times and by 1962 more than four times that of 1940 per employee. This may be a little, but not much short, of the nationwide increase in coal mining output per man in the same period.

The demand outlet for coal has been shifting. Fuel consumption by the railroads has shifted to diesel oils and home heating has shifted extensively to gas and oil. But the shift from those fields are being offset largely by increases in exports and in consumption by electric utilities.[5]

---

[5] The changing markets for West Virginia Coal 1951-63 by James H. Thompson. Bureau of Business Research, West Virginia University, 1964.

Coal production in the state has not been maintained as well as in the six counties. See chart showing the changes in the state employment production and payrolls through the same period of years.

The natural gas and oil opportunities are not very important in volume of employment, but are stimulating the economy of the area. Active drilling is underway in each of the six counties. The number of wells now being drilled in the state is reported to be greater than at any time during the past forty years.

The revival of drilling seems to be primarily on account of the development of a more extensive use of the process of "hydro-fracturing" to rejuvenate old wells and increase flows from new wells. Improvements in machinery and technology also encourage drilling to greater depths to tap reservoirs at lower levels.

Trends of production in the area are not reported separately from that of the state. Natural gas production in the state in 1960 was at about the same level as in 1940, but by 1963 had increased 12 percent. Petroleum production had declined from 1940 to 1959, but increased 54 percent by 1962. Thus currently the trends in the flow of both products are upward. No data for predicting the potential of the years ahead are now available.

The Forests and Lumber Production

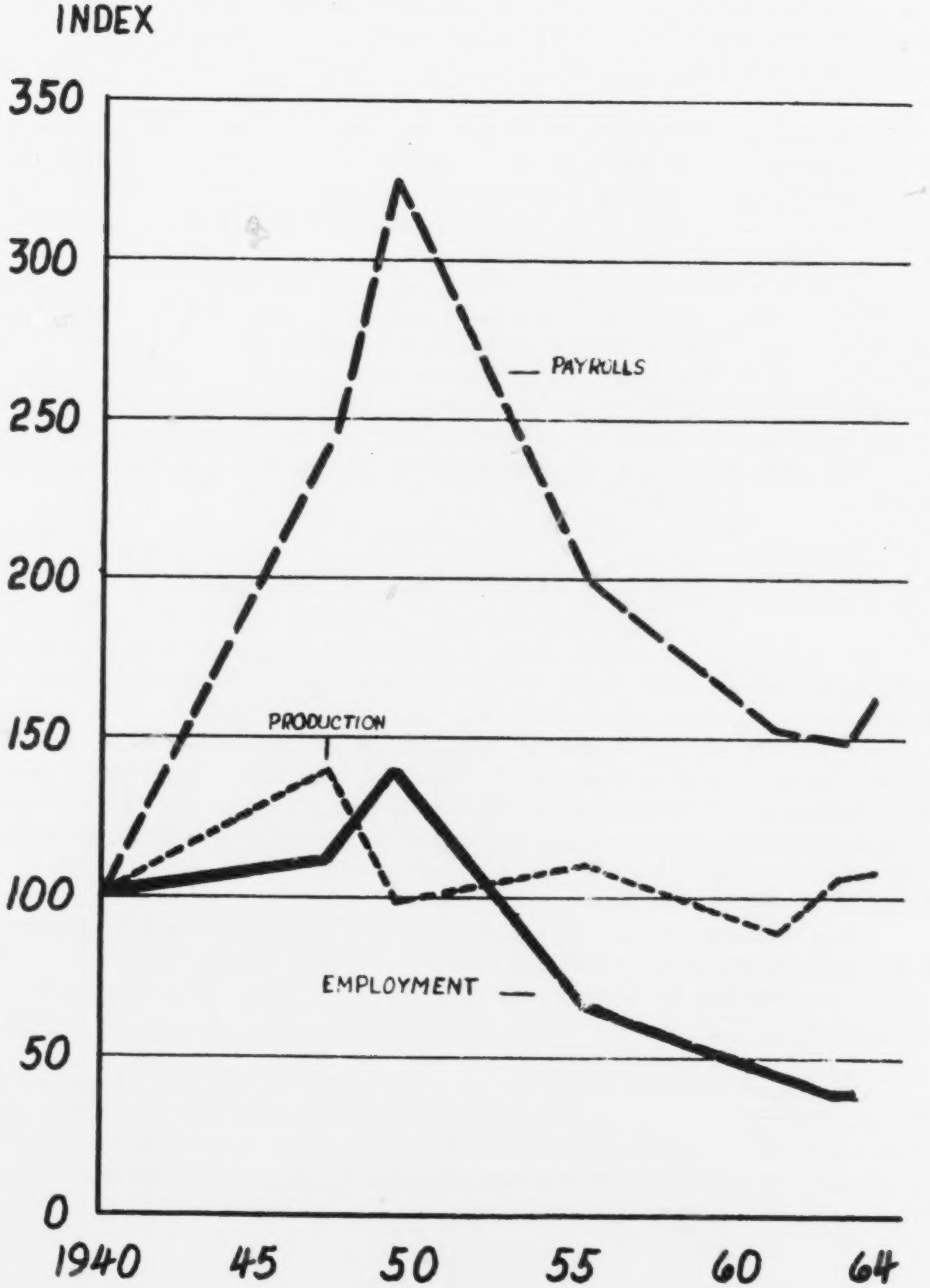
The trend in the employment record in forest products was downward from 1940 to 1960 in the six-county area. The reduction in the first decade was only about 6 percent, but increased through the next to about 19 percent. Thus, there was no opportunity for labor to shift from the farms to employment in the lumber industry. A more significant fact with reference to the forests, however, emerged from the agricultural analysis indicating that reforestation had extended to about 73 percent of the total land area in these six counties.

What are the prospects for marketing forest products? Can forest growth contribute to economic growth? A brief analysis of trends may suggest the potentials of economic growth from forest production and employment.

Hardwood lumber is the major product of the forests of the state. Increased demands through the war years and reconstruction increased employment and production of lumber by one half from 1938 to 1947. Employment and production turned downward shortly thereafter. The bottom of the depression in this industry was reached in 1961 and 1962.

Chart IV

BITUMINOUS COAL MINING
EMPLOYMENT, PRODUCTION & PAY ROLLS
WEST VIRGINIA 1940 - 1963



Employment had been reduced 50 percent and production by 36 percent. The reduction in employment was similar to that in the coal industry, but with a significant difference in the rate of reduction and output.

Note the interrelations in employment among farming, mining, lumbering, and railroading. Reductions in the railroad requirements for ties and lumber reduced the market for the lumber products of the farm and for the lumber mills. The shift of railroads from the use of coal to fuel oil practically eliminated that outlet for coal. In the meantime shifts in the methods of mining coal greatly reduced the farmer and sawmill markets for mine timbers and lumber. Those shifts, however, seem to have about run out their several courses by 1960. The state lumber and coal productions have turned upward through 1964.

The growth of timber in the forests of the state since 1949 has been characterized as an "explosion" of timber supply.[6] This is indicated by a resurvey of the state as of 1961. Among the most significant growth items reported were an increase of almost 65 percent in the volume of saw timber and that the volume cut in 1960 was less than one-half of the net annual growth. So the state is accumulating a stock of merchantable timber at a rapid rate.

The rapid building up of timber resources is providing opportunity for expanding employment in forest industries. A report on timber resources in 1961 indicated that the timber cut at that time was employing about 5000. The reported rapid growth provides for a potential increase in the annual harvest and continued improvement of the quality of the raw material. This could provide also material for increased remanufacture in the area and in the state.[7] It was estimated that the number of employees could be increased from the 5000 to 12,000 with a high level of remanufacturing.

The national forest which extends into two of the six-county area was established in 1920. The timber resources had been depleted badly on the land acquired. Since then forest management and protection have restored it to a productive forest property. The average annual cut increased from 562,000 through 1930-39 to 27,090,000 board feet in 1960.

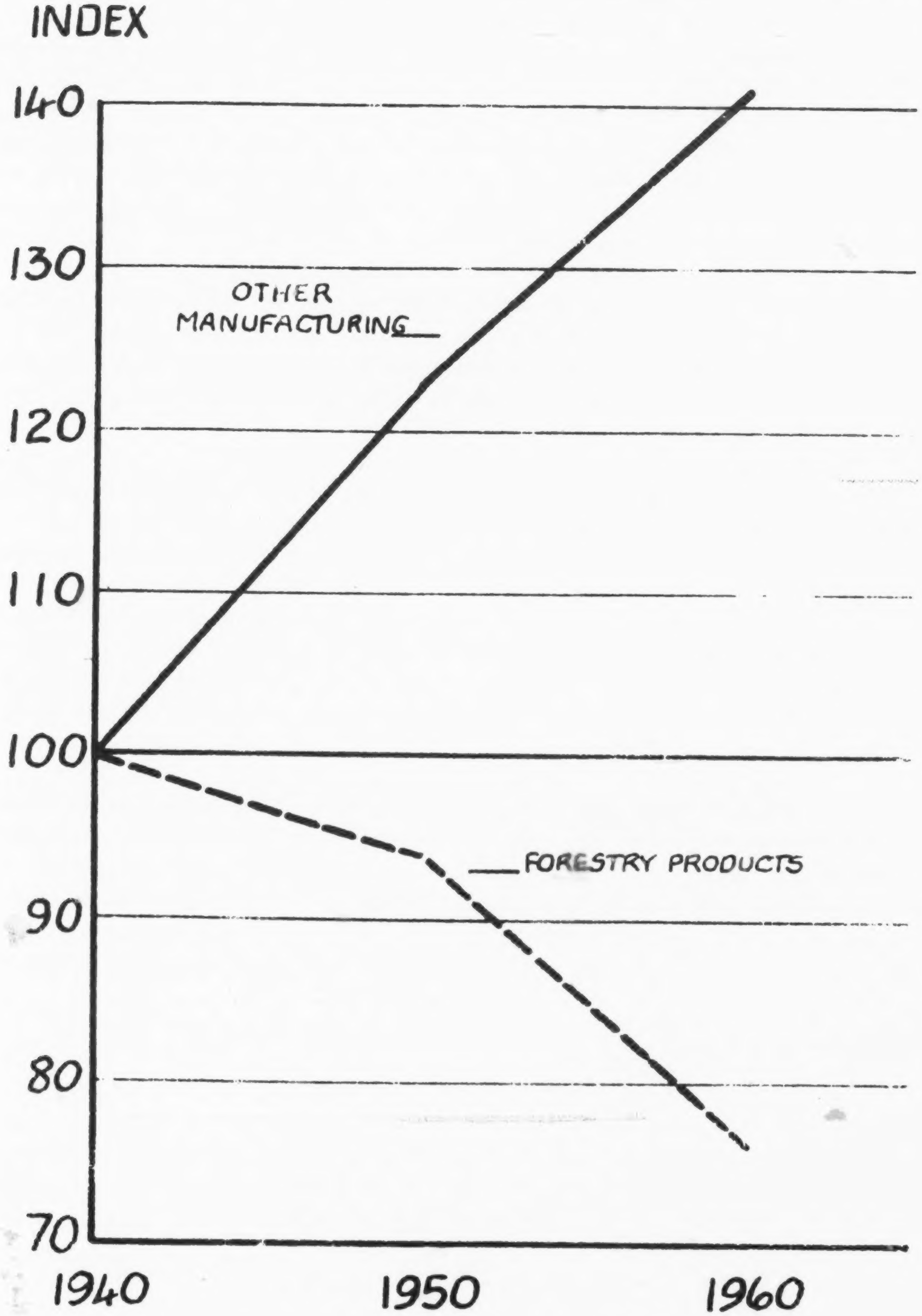
---

[6] The Timber Resources of West Virginia, U. S. Forest Service Resource Bul. N.E. 2, 1964, p. 23.

[7] The Timber Resources of West Virginia and the National Forests in the State. Senate Document No. 33, 87th Congress, 1st Session, by the Forest Services, USDA, 1961, pp. 12, 21-22.

Chart V

EMPLOYMENT - SIX COUNTY AREA
1940 - 1960
MANUFACTURING AND FORESTRY PRODUCTS



The manufacturing or processing of timber other than lumbering has been limited to date to a few small woodworking plants which employ only a few workers. Recently, however, a few new plants are being established, including a flake board operation. The materials are here as potential for a much more significant development.

See chart of employment in manufacturing and forestry products. For this chart the forestry products are shown separately from the other manufacturing which is almost entirely glassware.

The glass industry is second only to wood products in employment in manufacturing. It has been developed in Lewis County. By 1950 the level of employment in that industry had increased by 64 percent from 1940 to 1950 and continued upward through 1960. This industry employs highly skilled and semiskilled labor. Its finished products are sold country-wide. It is a stable industry that plans to continue increasing employment from 1960 to 1966, at a moderate rate. In the meantime a new glass plant, a subsidiary of the Corning Glass Works, has been established in an adjoining county.[8]

Recreation Resources

The potential recreation resources of the area are substantial but the records of the past to date are hardly a sufficient basis for indicating trends. The extension of the national forest into the two counties, Nicholas and Webster, comprise about 11 percent of the National Forest area.

Outdoor recreation areas in the National Forest include 10 sites within and adjacent to the two counties, varying in size and type of facilities. Visits for recreation, hunting and fishing in 1961 were reported to total 120,000.

The National Forest Service, however, presented immediate development programs for increasing access and accommodations for visitors to this area. The programs included additional occupancy, camping and picnic sites and extending the Allegheny Parkway Highland Scenic Drive through the area. In fact, this area would be included in a comprehensive program proposal for the Pocahontas Recreation Complex[9] that would extend access roads to connect with major highways through the state and invite tourists with a greater range of interests.

---

[8] Note: "The other durable goods" item line 15, Table II, p. 32, the six county represents the glass industry. West Virginia Labor Force, Department of Employment Security. A Study of Manpower Resources, the six counties plus Clay, Sept. 1961, pp. 13, 21, 24, 26 and the Area Report, p. 31.

The Parks and Recreation Division of the State Department of Natural Resources maintains several recreational facilities in the six-county area. Holly River State Park, including about 1000 acres, is a recreation forest reserve which in 1961 registered 48,000 visitors. It was short of camping facilities, only 9 cabins in use. Cedar Creek, about 2000 acres, reported 28,000 visitors for day use. Carnifax Ferry is a historical monument of a Civil War battle. Visitors were reported to be about 37,000 in 1961. A game farm and hunting area add to the points of interest. Programs are needed for extensive expansion of facilities including camping and overnight accommodations.

The new reservoirs being developed in the area have substantial potential for attracting tourists and week-end visitors. The Summersville dam being constructed on the Gauley River will create a large body of water extending at length up stream with great capacity for boating. And reserve shore areas will provide for extensive developments for camping and other recreational activities. Boating has moved in on the Sutton Reservoir, but the shore area facilities remain to be developed.

Transportation

Railway employment increased from 1940 to 1950 in response to the great increase in volume of freight to be moved, but was reduced sharply on account of changes in operations and continued increasing competition from trucks and autos. Railway employment had increased about 40 percent from 1940 to 1950 but was reduced below that level in the next decade. In the meantime employment in trucking and other forms of transportation had doubled and again doubled to the point of exceeding by 1960 the employment of the railroads.

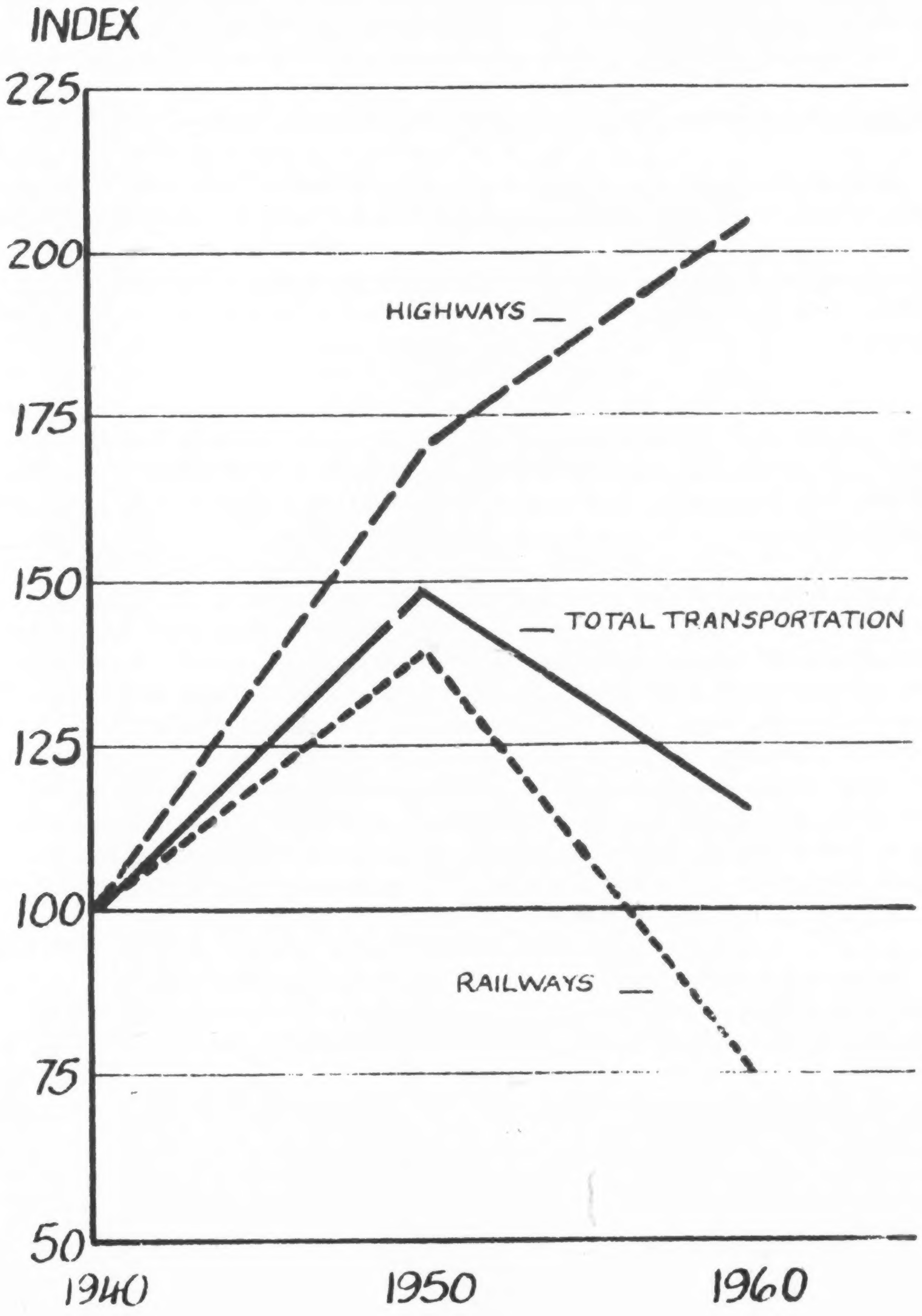
A network of railway extensions from the C & O to the south, B & O from the north, and the Western Maryland from the east had reached into the area long before 1940 to provide the major means of transportation from this area to outside markets. Construction and

---

[9] The Pocahontas Recreation Complex, Monongahela National Forest, West Virginia, 1962, A Study of the Opportunities for Outdoor Recreation, U.S.D.A. Forest Service -- Eastern Region.

Chart VI

EMPLOYMENT - SIX COUNTY AREA
1940 - 1960
TRANSPORTATION, RAILWAYS & HIGHWAYS



maintenance of the roads had been a major means of employment and had provided local markets for timber and coal through many years.

Great technological changes in maintenance and in operations reduced the labor requirements. The local maintenance requirements were reduced by the treatment of ties and other timbers so that they would last longer. The extension of mechanization to other maintenance operations further reduced labor requirements. In train operations the most significant change was the conversion from steam to diesel engine power. This was very significant at some points on account of abandonment of division operations not required for the diesels.

Improvement of the highways is now the most important transportation problem of the area. It is important not only to facilitate travel and trade within the area, but more important in the long run to provide job opportunities, by the location of additional manufacturing plants in the area, and in the inflow of tourists to use the available recreational resources.

Most of the local highway mileage in the area is narrow, two-way, very crooked, and some with narrow bridges and steep grades. The major U. S. highways east to west pass by - 50 to the north and 60 to the south, but they, too, are in great need of improvement as access routes to the area.

The construction of new routes through central West Virginia, suggested in the report of the President's Highway Transportation Committee, could be a great boon to the economy of this area. The construction of Interstate 79 will touch the area, providing access from the north, and extending 66 from Virginia through to Ohio could provide a very significant additional access route east and west through the area. The report also calls attention to a scenic highway through the National Forest area in the vicinity of Petersburg, and the proposed Allegheny Parkway from Harpers Ferry through Keyser and south through the National Forest in the state, leading into Kentucky. Such highways could provide adequate access to the recreational resources.

Quoting from the report: "Good modern highways can have a tremendous effect upon the economy of an area." The availability of adequate highway transportation can keep to a minimum the costs of the distribution of goods and services. As to "Public Recreational Areas -- Highway improvements have had and are continuing to have tremendous impact on the development and utilization of available areas, but only if reasonable means of transportation are available."[10]

Summary

Now to summarize - briefly up to this point.

Employment in the use of natural resources has been greatly reduced from about 1950 through 1960. Conditions extending through the latter date are not yet very promising for a significant recovery.

The production of the agricultural resources could be increased by technological improvements but without increasing employment. The mineral storehouse remains abundant with resources, and production may be not only maintained, but even increased, without offering more jobs. The forest growth is outpacing the harvest at a rapid rate, facing uncertainty as to the demand for lumber.

Alternative job opportunities are in prospect, however, for the use of the forest and water resources of the area. The use of the reservoirs and the forests offer opportunities for inviting more tourist and week-end invasions into the area. Moreover, improvements in forest and reservoir area facilities may initiate an upward trend in employment.

The upward trend in employment, in manufacturing and highway transportation points, on the other hand, to shifts to more jobs in the use of forestry resources in remanufacture, and the more extensive distribution of products of the area over improved highways.

Employment in Other Activities

Increases in employment in most other activities offset in part the great reductions in natural resources and on the railroads, but left a large pool of labor force unemployed.

Employment in these other fields of activity by 1960 had replaced the natural resources as the major fields of employment. They had increased from about 40 to 60 percent of the total employment of the area, but had increased only about 15 percent against the reduction of the total in the other fields by about 40 percent.

---

[10] Report of the Subcommittee on Highways of the Transportation Committee, the President's Appalachian Regional Commission, Oct. 20, 1963, pp. 3, 4, 13, 15-17.

Employment area totals and changes
and
manufacturing, construction, and services

	1950	1960	Percent
Total area	32,006	25,170	-21.4
Trade	3,498	4,294	+22.8
Services	1,971	1,551	-21.3
Manufacturing[a]	1,694	1,939	+14.5
Education	1,651	2,064	+25.0
Construction	1,509	1,526	+ 1.1
Welfare and health	1,155	1,518	+31.6
Hospitals	705	944	+34.2
Public administration	773	810	+ 4.8
Utilities	616	915	+48.5
Finances, etc.	244	349	+43.0
Total above	13,806	15,910	+15
Present total, area	43	63	

[a] Other than lumber and wood.

Now we have to face the problem of finding employment for those workers who had been displaced by scientific and technological developments and shifting demands, but to date have not found employment elsewhere. In addition, we have the problem of preparing the annual new entrants to the labor force for finding remunerative jobs in the area or elsewhere.

Human Resources[11]

Now to turn to the human resources of the area and prospects for the future. Recommendation No. 1 of the panel area report in 1962 reads as follows: "There must be a constant upgrading of human resources - through school, churches, retraining programs and forums."

Schools and educational programs in the area will be reviewed and analyzed briefly in relation to the problems of upgrading the human resources for increasing employment and incomes.

Readjustments between 1950 and 1960 to changes in employment opportunities resulted in net out-migrations, reductions in population and high level unemployment in the several counties.

County	Population		Percent change	Percent unemployed[a]
	1950	1960		1961
Braxton	18,082	15,152	-16.2	12.4
Gilmer	9,746	8,050	-17.4	7.6
Lewis	21,074	19,[illegible]11	- 6.5	12.0
Nicholas	27,696	25,414	- 8.2	14.9
Upshur	19,242	18,292	- 4.9	13.3
Webster	17,888	13,719	-23.3	23.0
Total	113,728	100,338	-11.8	13.8

[a] June 1961, West Virginia Labor Force, the Six County Area, West Virginia Department of Employment Security, September 1961, pp. 12, 57.

Manpower resources and unemployment were estimated as of June 1962 and the employment prospects in 1966 in the area, on the basis of the intensive survey in 1961. The labor force, employment and unemployment were estimated as follows:

Total civilian labor force	27,110
Self-employed	6,540

---

[11] Leonard M. Sizer, Professor of Rural Sociology, contributed substantially to the development of data relating to education in the area.

Wage and salary workers	17,320
Unemployed	3,250
Percent of unemployed	12

Area employers were expected to need by 1966 about 1900 new workers. This would include 1200 replacement workers and about 700 new jobs to be provided by industrial growth. In the meantime 4620 young people were expected to enter the labor force. Thus a continued surplus of labor was indicated through 1966.

The study of the unemployed workers revealed that about 60 percent had quit school between the seventh and eleventh grades, whereas 25 percent had a high school education or better. As to work experience, 36 percent of the total were unskilled or new entrants and 44 percent were skilled and semiskilled. It was estimated that 60 percent of the job opportunities would be for the skilled and semiskilled workers. However, some of the skills of the unemployed were not suitable for the prospective job opportunities. Displaced skilled mine operators, for example, would need training for other skills. The conclusion: "The area is faced with a definite challenge in preparing its unemployed workers for job opportunities. To qualify these persons for employment in or out of the area, skill upgrading is necessary through vocational training and retraining. Present facilities and programs for this purpose are inadequate."[12]

Educational Attainment and Employment

Educational attainment is a significant factor in finding a job and in the wages or income to be obtained. The recent Economic Report of the President shows that the national employment of white-collar workers increased from 31 percent in 1940 to 44 percent in 1964 of the active civilian population, whereas farm workers and unskilled laborers declined from 27 to 10 percent. The employment changes have resulted from shifting patterns of demand for labor in combination with the rising educational attainments of the labor force.

The national educational attainment of the civilian labor force 18 to 64 years of age increased substantially from 1940 to 1964. The median school years completed increased from 9 to 12. The portion of the work force with eight years or less of education declined from 50 percent to

---

[12] Employment Situation in the Six County Area, presented by John O. Crawford, Department of Employment Security, September 7, 1962.

23 percent of the labor force. The statement adds that today this group with no more than eight years of schooling consists primarily of people beyond the age of 45, and its number is shrinking rapidly.[13]

Attainment of the national civilian labor force, 18-64 years, percent of total[a]

Years of school	1940	1964
8 years and less	50	23
9 - 12 years	38	55
13 years and over	12	22
Median year completed	9	12

[a] Economic Report of the President, 1965, p. 123, Department of Commerce and Labor.

Later the report cites the returns from education to the nation and to individuals. Again quoting: "the rising level of education appears to account for between one-quarter and one-half of the otherwise unexplained growth of output. Despite the great expansion of the better educated population, the pattern of income differentials has remained substantially unchanged over the past quarter century." Moreover, "the incidence of poverty is closely related to educational attainment."[14]

Mean income--males 25 to 64 years old, percent of total[a]

Years of school	1949	1961
8 years and less	$2,232	$3,483
High school 4 years	3,820	6,102
College 4 yrs. & over	6,236	9,530

[a] Statistical Abstract of the U. S., Department of Commerce, 1923 ed., p. 122.

---

[13] Economic Report of the President, 1965, pp. 122-123, Department of Commerce and Labor.

[14] Economic Report of the President, 1965, p. 157.

Return to the six-county area to consider problems of finding jobs for the unemployed, and upgrading the educational attainments of the labor force to qualify for more and better jobs in the future.

The labor force supply of the area, as indicated earlier, exceeds the local requirements and jobs outside the area are needed. Moreover, new entrants annually add to the supply so that it is essential to provide training that will prepare those who want jobs to find more opportunities within, or outside the area. Farm workers leaving the land, displaced miners, and other unskilled workers are handicapped from finding jobs anywhere by the general decline in jobs for unskilled workers. Many of them could be upgraded by some special on-job training or adult-school education courses.

Skilled and semiskilled employment is being maintained generally, but the problem locally is to find the jobs to engage the skills in this area. In 1961 there were many carpenters, skilled mine-operators and truck drivers unemployed. The skilled carpenters and truck drivers probably could obtain jobs in time in the area or by looking elsewhere but the coal miners, skilled and unskilled, are up against a continued upward trend in displacement, nationwide. The miners need training for alternative occupations.

The unemployed school dropouts, including the new entrants who have quit school at or below the eighth grade level, should be persuaded to go back to school.

Educational Needs and Programs

The relatively high dropout ratio in the state and in three of the counties points to the need for more extensive vocational training in the high schools to attract students who have little interest in a general liberal arts education, but would be interested in developing some skill.

School dropouts, percent of 16 and 17 year olds not in school, Census of 1960

The Nation	The State	The Counties	
19.1 percent	26.6 percent	Gilmer	20.5
		Upshur	21.3
		Lewis	21.6
		Nicholas	27.8
		Braxton	35.7
		Webster	47.3

The median educational attainment of the persons 25 years and older in the area reporting in the census of 1960 ranged between 8.2 and 8.7 years completed. The national average was 10.6 years and the state average 8.8 years. The state ranked 48th among the several states. The adult population with less than five years of schooling was reported to be 11 percent, the 37th state against the national average 8.3 percent.

The state also ranked 48th in the percent of those with at least four years of college. The state averaged 5.2 percent to be compared with the national average of 7.7 percent. The five highest ranking states reported about 10 percent, with at least four years of college. A significant point to note in this connection is that on account of the depressed conditions probably a relatively high percentage of the college graduates have gone to other states for jobs.

The national trend in educational attainment of the adult population since 1940 has advanced more rapidly than that of the state. The median years completed advanced from 8.4 to 10.5 while that of the state advanced only one year from 7.8 to 8.8 years. The adults with at least four years of college increased from 4.6 to 7.6 while in the state the increase was from 3.4 to 5.2. This shows progress but not quite up to the national growth.

Educational attainment[a]
in state and six counties, 1960

Item	Median years	Percent 4 years high school	Percent college 4 years and over	Percent 1961-62 high school graduates going to college
State	8.8	31	5	29
Braxton	8.3	19	3	20
Gilmer	8.6	27	7	42
Lewis	8.7	29	4	25
Nicholas	8.5	21	4	21
Upshur	8.6	26	6	32
Webster	8.2	15	3	27

[a] School years completed by persons 25 years and older, 1960. Source: Research Report 1964-1, pp. 21, 22 and 23. West Virginia Education Association.

The most critical breakthrough point may be at high school graduation. The first step, of course, is to carry through the grades, reducing the "dropouts" up to that point. The next step is to increase the number going on to college. The adults in the area with at least four years of high school range from 15 to 29 and in the state up to 31 percent. But the highest reported was short of the national average of 41 percent. The operations of the public schools in the area must be upgraded to induce more students to carry on through high school into college to meet the demands for higher level training.

Increased investments in the public schools of the area will be necessary to upgrade the training of the youths for higher level job opportunities. The estimated expenditure per pupil in the state public schools for the 1963-64 school year was only $300, the 46th among the states, and about two-thirds the national average. The percentage of the state and local government expenditures on education remained almost constant through the years 1940 to date. The upgrading of the human resources will require an up trend in the allocation of investment funds to growth at the elementary and high school level of training.

The public school expenditure per pupil for the 1963-64 year in four of the six counties was far below the average of the state. The averages in those four counties ranged from $243 to $257 per pupil. Recently, the voters in one of these counties rejected a proposal for a bond issue to provide funds for investment in improving schools. Such a proposal has not been submitted in the other counties. In two other counties voters have recently turned down proposals for additional tax levies for funds to improve instructional resources, and two other counties have not submitted such proposals. The voters in two of the counties, however, have approved additional levies and have proceeded to upgrade their schools.

Consolidation of one-room elementary schools and some consolidation of the smaller high schools could increase materially the efficiency of the use of funds in the several counties. Consolidation of one-room schools into graded schools has been completed in one county, a few such schools remain in two others; but in three others many upgraded schools remain in use. The average attendance in such schools is low and teachers are reluctant to accept assignments there. Some of the high schools also are too small to offer a variety of courses by specialized teachers adapted to the high school students.

A recent special survey invited by leaders in one of the counties pointed to the need of consolidation and upgrading the school facilities. After assessing the shortage of minimum facility requirements, it was concluded that the county had the potential for a first class school program, by using bond potential to the legal limit; and a 100 percent additional tax levy to construct new, renovate, remodel, and refurnish elementary and high school centers. This was suggested as a program for the next twenty years.

Two significant training resources other than the regular public schools should be noted. They are the vocational training courses available to high schools; and the 4-H club activities outside of the school system, but the leadership supported in part by public funds.

All but one of the counties offer vocational training in agriculture and home economics. In two counties a few persons are enrolled in trade and industrial education courses. Both the vo-ag and home economic courses should be extended and changed to include courses directed more toward meeting the needs of more of the skilled occupations open to students. Some may be stimulated to go on to college for more training along the lines of their special interest.

The maintenance of 4-H club enrollment in the area in spite of the great decline in number of farms is a significant achievement. And this has contributed to maintaining, or stimulating, the interest in higher education. The most notable case among the counties is that of Webster. Dynamic leadership in that county has maintained and even increased enrollment against a sharp reduction in population and in number of farms in the county.

A socioeconomic ranking of the area counties was included in a recent study of occupations, education, and income levels of all the counties in the Northeast Region of the United States in 1960. This region includes 399 counties. Census data as to median family incomes, blue-collar nonfarm laborers, and the number of adult persons who have completed less than five years of elementary school in each county were used to establish its rank among all the other counties. The level of income was used as the positive factor, and the low levels of education and of occupation as negative factors in establishing the social rank scores for each county.

The Basis of Scores

Occupation: The number of craftsmen, operatives, and nonfarm laborers per 1000 employed persons.

Education: The number of persons who have completed less than five years of elementary school per 1000 persons 25 years of age and over.

Ranking of the area counties compared with Montgomery County, Maryland, and Ohio County in West Virginia, 1960[a]

County	Standardized component scores			Social rank scores
	Occupation	Income	Education	
Montgomery Co., Maryland	100	100	97	99
Ohio Co., W. Va.	58	43	72	58
Lewis	56	16	58	43
Upshur	39	12	61	37
Gilmer	54	4	49	36
Nicholas	13	16	47	25
Braxton	41	3	29	24
Webster	20	1	21	14

[a] A Socioeconomic Ranking of Counties in Connecticut and the Northeast Region: 1960, by Edward G. Stockwell, Agricultural Experiment Station, University of Connecticut, Research Report 2, Jan. 1965.

Income: Median family income.

The resulting indications of rank of the counties in the area are presented with the top ranking county in the region and in the state. These rankings may be considered crude measures of the handicaps of the several counties in the area against lifting incomes and educational attainments in relation to national goals. The leaders in the several counties should, of course, recognize the low ranking as a challenge to the people of the area to form ranks with representatives of the state and federal governments in cooperation to upgrade human resources and incomes in this pilot area.

Concluding Summary

1. Upgrading the public schools is essential to the strengthening of the human resources and as a contribution to increasing the productivity of the natural resources of this pilot study area.

The first important step in this upgrading is to develop ways and means of reducing "dropouts" by improving the efficiency and attractiveness of the schools, so that more students will carry through to graduation from high school.

The high school must be upgraded also to provide the training necessary not only to meet college entrance requirements but more than that to open the doors to knowledge of science and technology useful at home. The high school courses should include sciences applicable to the natural resources of the area as well as to basic introduction to college training for professional careers. In addition, the students should be offered opportunities to choose occupational training courses for home or local job opportunities in the area and elsewhere.

2. Increased expenditures upon public school education from the basic foundation up through high schools are essential to the upgrading of the human resources. The resistance to increasing local taxation where necessary must be overcome. One of the arguments used in opposition is that "we export our higher education." College graduates leave for jobs elsewhere. The obvious answer is that the wages and salaries paid in the area must be upgraded in order to hold or attract from elsewhere the needed talent. Furthermore, those who go elsewhere for jobs are not altogether a lost resource to the area. Many will return funds to their families and some will return in person with higher training or job experience for managerial leadership in the area, and will contribute to the process of leveling up incomes and living conditions at home.

3. National education legislation pending will provide assistance for lifting the six counties from the long depression in educational resources. This would, in effect, complete the range of the scope of educational cooperation from the bottom up, parallel to that now available for the development and use of the natural resources.

ANALYTICAL METHODS FOR THE DETERMINATION OF GROWTH POTENTIALS OF DEPRESSED RURAL AREAS

H. Albert Green*
Economic Research Service
United States Department of Agriculture

Introduction

In response to public policy needs some researchers have suggested that our first major question is to determine whether the raising of incomes in particular depressed rural areas is worth undertaking in terms of economic costs and benefits.[1] If the answer is affirmative, then we should proceed to determine what is the most efficient way to accomplish the job. However unfortunate as the case may be, we cannot answer whether the development task is economically justifiable without ascertaining what directions development should take for greatest competitive efficiency.

Growth potential is related not so much to the nature of deficiencies and people's needs as it is to the specific nature of possibilities and their relative benefit and cost relationships. I suspect that in spite of all that may be done in way of facilitating development within depressed rural areas, the major alternative for the people of these areas will remain out-migration.[2] While my discussion of analytical methods will be concerned primarily with intraregional development, several of the techniques

---

*The author wishes to thank E. L. Baum, A. R. Bird, B. R. Hoffnar, and M. F. Petrulis for comments on an earlier draft of this paper.

[1] In this paper the term "growth potential" is defined as capability for economic activity expansion. "Depressed" refers to the existence of relatively low incomes and a substantial degree of underemployment and unemployment. The concept of "rural areas" is broadened for the present discussion to include population centers of less than 10,000 located outside the urban fringe (in addition to areas included under the present Census definition of "rural").

[2] Massive development projects in Southern Italy, the United Kingdom, and Puerto Rico have not substantially affected the unemployment level. Although insufficient to ameliorate conditions of the depressed areas, out-migration has remained substantial.

as well as the comprehensive approach will apply equally well to analysis of the costs and benefits of subsidized migration as a solution for the people of the depressed rural areas.

In this paper, I shall not attempt to discuss thoroughly the uses and problems in concept and application of any one of the many techniques which are to some degree operational at the present time, nor shall I attempt to survey the entire field. My alternative is to cite several of these analytical tools, mentioning some of their uses and qualifications, and to argue for a comprehensive and integrated approach to research and policy.

Let me begin by considering some basic aspects of the nature of socioeconomic development and socioeconomic structure. The concern of this workshop has been with the development outcome (however measured) which will or can result from the socioeconomic conditions of the depressed rural areas. If change in these basic conditions is not expected, there is little need to examine the socioeconomic structure as theory indicates may exist. When the very essence of economic development as may result from autonomous or volitional action is structural change, it behooves us to examine the socioeconomic structure in some detail.

The attempt to predict the outcome of alternative decisions without taking into account the actual form and parametric values of socioeconomic structural relations is often so lacking in precision as to be of little value for policy use. Greater validity will accrue to policy choices based on estimation of the existing structure and on our knowledge of its expected changes and integrated socioeconomic effects.

Some "Rough-and-ready" Methods

With modern computer techniques, a large number of variables can be efficiently manipulated and tested for statistical correlations with dependent growth and development variables. Particularly useful are scaling techniques, factor analysis, and step-wise regression.[3] These methods, especially when used in conjunction with one another, can yield very meaningful probability characteristics of growth and other development phenomena.

---

[3] For an empirical example of scale analysis, see N. E. Green, "Scale Analysis of Urban Structure," American Sociological Review, Feb. 1956, 21:8-13; of factor analysis, see J. H. Thompson, et al., "Toward a Geography of Economic Health: The Case of New York State," Annals of the Association of American Geographers, March 1962, 52:1-20; of step-wise regression, see J. M. Mattila and J. F. Concannon, A Study of ARA Designated Counties: Part 1, A Regional Interaction Unemployment-Migration Model; Part 2, A Test for the Validity of ARA Designation of Counties, unpub. manuscript prepared for the Area Redevelopment Administration, 1964.

The limitations of these methods are the limitations of substantial abstraction and of statistical inference.[4] For example, there are problems in evaluation of unexplained variance, in possible inclusion of non-additive variables, and so on. At this level of abstraction, assumptions as to the form of the structural relationships are rather severe. Subjective judgment enters when the analyst selects the variables as well as the nature in which they are analyzed; it enters when specific factor loadings are selected as being most appropriate; it enters when for socioeconomic analysis we assume parametric stability over space or time.

At present, I do not expect that relationships developed without detailed specification of socioeconomic structure will be directly useful for the determination of growth potentials of specific areas.[5] An unrefined approach may be useful, however, in indicating actual social and economic associations which otherwise may be overlooked. As our knowledge of socioeconomic structure increases, these methods may facilitate some analytic shortcuts.

Analysis of Socioeconomic Structure

The basic dimensions of socioeconomic structure are space, activity, and time. In each of these dimensions, there appears to function some degree of hierarchy which is most meaningful in the context of development research and policy. A metropolitan area, for example, generally has a great deal more influence on its rural periphery than does the periphery have on its urban center.[6] Similarly, the steel industry has a great deal more impact on Pittsburgh than does, say, the area's retail trade industry. Time is a little simpler in that it is already chronologically ordered for us--today has little effect on yesterday but it has a considerable impact on tomorrow.

---

[4] Statistical inference refers to the consistency of statistical information with certain hypotheses made as to the parametric relationships involved; it tells us little as to the stability of these relationships.

[5] In results of studies to date, there have been two difficulties: the problem of heterogeneous data with high standard error of estimates and low multiple correlation coefficients; and the problem of high levels of intercorrelation which have resulted in high standard errors for the regression coefficients. Moreover, each area tends to have structural characteristics which uniquely determine the direction and extent of development irrespective of what probabilities may indicate.

By considering the correspondence of the "triangularized" character of the basic socioeconomic dimensions, I mean to stress two things: the basic interdependence of actions and effects; and the tendency toward dominance of some actions over others. In addition, as I shall contend below, for valid analysis of growth potentials the functioning of interdependence and dominant tendencies must be considered not only within each of the three dimensions but also among them.

Let us now turn to the respective analysis of space and activity.

Spatial Structure Analysis. A rather frequent--perhaps sometimes a too frequent--endeavor is the tabulation by spatial unit of various socioeconomic data. For purposes of simple description or for further analysis we often find in tabular or cartographic form such county or state data as the number of industrial plants by establishment-size class, employment or earnings in given industries, per capita or median money or personal income, population or labor force with certain social or economic characteristics.

Sometimes these data are related to some base such as total activity of the spatial unit--for example, county employment in a specific industry as a percent of total county employment--or the national total or average--for example, median county income in the lowest quintile (United States). Ratios such as the relative share or the location quotient have been used to analyze the spatial structure.[7] The simultaneous consideration of a number of variables--for example, by means of factor analysis--has meaningfully been used for spatial description and for comparative spatial analysis.[8]

---

[6] The exception to this generalization might be in the Plains States, where agriculture is the dominant industry.

[7] For a discussion of the empirical use of these measures, see: Walter Isard, "Industrial Location Analysis and Related Measures," pp. 232-308, in his Methods of Regional Analysis, New York: John Wiley, 1960; E. S. Lee, et al., Population Redistribution and Economic Growth, United States, 1870-1950, Vols. I-III (Memoirs Vols. 45, 51, 61), Philadelphia: American Philosophical Society, 1957, 1960, 1964.

[8] J. H. Thompson (op. cit.) has delineated homogeneous socioeconomic regions on the basis of characteristics other than agriculture and physical topography (which predominate the present Census system of State Economic Areas developed by D. S. Bogue and Calvin Beale).

Spatial linkages in terms of accessability to markets (especially of labor and consumer-oriented goods) have been successfully, albeit crudely, approximated with potential and gravitation models.[9] Spatial activity flow measurement and estimation have been used to portray in some detail the nature of spatial linkages of demographic and economic levels of activity.[10] In addition to direct measurement, interregional flow activity linkages have been approximated with location quotients by adjusting them for variations in regional income (for consumer goods) and regional economic structure (for intermediate goods) and through use of a transportation model which minimizes transfer costs of the flow movements.[11] Indirect information has also been derived residually by comparing spatially-specific detailed consumption and production activity matrices.[12]

---

[9] Several marketing consultant firms have made empirical use of "Reilly's law" (stating that sales volume is directly proportional to purchasing power and inversely proportional to distance from the consumer's residence). For further discussion of gravitation and potential concepts, see Walter Isard, "Gravity, Potential, and Spatial Interaction Models," pp. 493-568, in his Methods, op. cit.

[10] See, e.g., E. S. Lee, op. cit.; J. S. Brown and G. A. Hillery, Jr., "The Great Migration, 1940-1960," pp. 54-78, in T. R. Ford (ed.), The Southern Appalachian Region: A Survey, Lexington: University of Kentucky Press, 1962; B. F. Duncombe, Upper Midwest Commodity Flows, 1958, Technical Paper No. 4, Minneapolis: Upper Midwest Economic Study, October 1962; B. J. L. Berry, et al., "Retail Location and Consumer Behavior," Papers and Proceedings of the Regional Science Association, 1962, 9:65-106; E. N. Thomas, et al., "The Spatial Behavior of a Dispersed Non-Farm Population," ibid., 107-133.

[11] See, W. W. Leontief, with A. Strout, "Multiregional Input-Output Analysis," pp. 119-150, in T. Barna, et al. (eds.), Structural Interdependence and Economic Development, New York: St. Martins Press, 1963.

[12] See, e.g., T. Y. Shen, "An Input-Output Table with Regional Weights," Papers and Proceedings of the Regional Science Association, 1960, 6:113-119; H. A. Green, An Analysis of the Potential Impact of Local Industrial Change, unpublished Ph.D. dissertation, Purdue University, January 1965.

The temporal aspects of these measures--for example, change in relative share ("shift"), or change in supply and product markets--have also been considered in a number of studies.[13]

In some studies, the characteristics of spatial structure have been directly measured; in others, they have been estimated indirectly through inference and imputation. Some studies have basically relied upon what might be gleaned from secondary data, while others have resorted in large part to primary data collection. One may expect greater validity of structural analysis based upon primary data collected for the purpose, but this is not necessarily the case; not only are the usual data collection problems involved, but the respondent often simply does not know what occurs concerning spatial linkage.

Activity Structure Analysis. Tabulation of activity data is also a frequent undertaking for descriptive and analytical purposes. Employment or earnings by industry, population by sex and age group, occupation by age group and education, characteristics of housing and other physical capital assets, number of welfare payment recipients, persons and families by money income class, labor force participation and replacement ratios--these and similar data are often presented.[14] Less frequently seen are activity input and output distributions describing socioeconomic structure--for example, consumer purchases of specified goods and services by income class of household, cost and production functions of various activities or industries (such as the so-called "retirement industry," recreation, particle board manufacture, etc.), activity sector output (sales) distributed by nature of purchaser, government revenues by detailed tax and nontax source.[15]

---

[13] See, e.g., L. D. Ashby, "The Geographical Redistribution of Employment: An Examination of the Elements of Change," Survey of Current Business, October 1964; R. E. Graham, "Factors Underlying Changes in the Geographic Distribution of Income," Survey of Current Business, April 1964; E. S. Lee, op. cit.; V. R. Fuchs, Changes in the Location of Manufacturing in the United States since 1929, Economic Census Studies No. 1, New Haven: Yale University Press, 1962; R. E. Lund, An Analysis of a Local Economy in a Period of Rapid Transition, Southwestern Wyoming, Laramie: University of Wyoming College of Commerce, June 1962.

[14] See, e.g., A. R. Bird, Poverty in Rural Areas of the United States, Agricultural Economic Report No. 63, USDA, Washington: GPO, November 1964; R. I. Coltrane and E. L. Baum, An Economic Survey of the Appalachian Region, with Special Reference to Agriculture, Agricultural Economic Report No. 69, USDA, Washington: GPO, April 1965.

Detailed activity analyses using interindustry and activity programming models have endeavored to portray interactivity linkages in a number of studies. Given the interindustry structure, the effects of specified changes directly affecting one sector can be considered with respect to the derived impacts affecting all the interrelated sectors of the economy. Activity multipliers, or what may be more specifically termed "coefficients of derived impact," can be calculated for evaluation of development alternatives. Interindustry frameworks have generally assumed linear structural linkages while by use of alternative activities and minimax conditions programming models have introduced some nonlinearities.[16] Industrial complex techniques in revealing the feasibility of combined interdependent processes have proved to be useful refinements for interactivity analysis.[17]

---

[15] See, e.g., the various reports of the 1960-61 Survey of Consumer Expenditures conducted by the Bureau of Labor Statistics with the U. S. Department of Agriculture; A. A. Walters, "Production and Cost Functions: An Econometric Survey," *Econometrica,* January-April 1963, 31:1-67; Ronald Bird and B. T. Inman, *Income Opportunities for Rural Families from Outdoor Recreation Enterprises*, Agricultural Economic Report No. 68, USDA, Washington: GPO, March 1965; Ronald Bird and Frank Miller, *Contributions of Tourist Trade to Incomes of People in Missouri Ozarks*, Research Bulletin 799, Columbia: University of Missouri Agricultural Experiment Station, March 1962; W. Z. Hirsch, *et al.*, *Intercommunity Cost-Benefit Analysis: A Case Study*, MR-2, Los Angeles: UCLA Institute of Government and Public Affairs, February 1964.

[16] See, e.g., W. Z. Hirsch, "Interindustry Relations of a Metropolitan Area," *Review of Economics and Statistics,* August 1959, 41:360-369; H. A. Green, *op. cit.*; C. L. Leven, *Theory and Method of Income and Product Accounts for Metropolitan Areas (Including the Elgin-Dundee Area as a Case Study)*, Pittsburgh: University of Pittsburgh Center for Regional Economic Studies, April 1963 (rprnt.); W. A. Green and J. F. Fritschen, *The Supply of Natural Resources for Future Agricultural Production, Texas River Basins,* paper presented before Texas Agricultural Workers Conference, Corpus Christi, November 1961; R. G. Spiegelman, *et al.*, *Application of Activity Analysis to Regional Development Planning: A Case Study of Economic Planning in South Central Kentucky,* USDA Technical Bulletin No. 1339, Washington: GPO, 1965.

Usually these models have been empirically implemented with primary survey data; several studies, however, have imputed individual activity structural relations indirectly from secondary data.[18]

Before we direct our attention to structural dynamics and a more comprehensive approach, let us consider the nature of hierarchial tendencies in spatial and activity structure.

Dominance in Spatial and Activity Structure. I will not present a lengthy discussion on the conceptual advantages or disadvantages of the three basic types of spatial delineations--namely, nodal or polarized, homogeneous, and policy or decision-making areas or regions.[19] But I shall make a brief case for the nodal concept as being most meaningful for development analyses. It is particularly useful as applied to functional socioeconomic areas (generally encompassing several counties) whether they are analyzed independently or in conjunction with other nodal areas comprising a policy region.

A polarized or nodal area may be defined as the geographic space concentric to a spatially integrating focal point. Functionally integrated socioeconomic areas will include not only the places where the people live but also the places where they buy and sell (including places of employment).[20] This integrating characteristic is most important if we wish to analyze the interdependent nature of costs and benefits associated with development alternatives. In addition, it is in such nodal centers that we find agglomeration economies--in industrial production as well as in distributive activities.[21] In large part due to these agglomeration economies, these socioeconomic nodes have particularly in recent years been the growing points not only in generally growing regions but also in those considered depressed.[22] We therefore want to determine what are the nodal points and what is their influence on the rural periphery; the techniques of spatial structural analysis cited above will help us in this determination.

---

[17] See, e.g., Walter Isard, et al., Industrial Complex Analysis and Regional Development, New York: John Wiley, 1959; Thomas Vietorisz and A. S. Manne, "Chemical Processes, Plant Location, and Economies of Scale," pp. 136-158, in A. S. Manne and H. M. Markowitz (eds.), Studies in Process Analysis, Cowles Foundation Monograph No. 18, New York: John Wiley, 1963.

[18] See, e.g., H. A. Green, op. cit.; T. Y. Shen, op. cit.; R. G. Spiegelman, et al., op. cit.

[19] For a discussion of these regional delineation concepts, see: Francois Perroux, "Economic Space: Theory and Applications," Quarterly Journal of Economics, February 1950, 64:89-104; John Friedmann, "The Concept of a Planning Region," Land Economics, February 1956, 32:1-13; J. R. Boudeville, "A Survey of Recent Techniques for Regional Analysis," pp. 377-397, in Walter Isard and John H. Cumberland (eds.), Regional Economic Planning, Paris: Organization for European Economic Cooperation, 1961.

Activities relate to each other in a manner similar to that in which spatial locations relate to one another. As the effect on a spatial reference point is determined in large part by the "mass" at and distance to other points, so do the production and distribution characteristics and the volume of activity directly and indirectly determine the activity level in a given activity sector. The direct and indirect relations among sectors of economic activity are significantly influenced by the fact that some sectors buy from (sell to) many sectors, others from (to) only a few.[23]

---

[20] Technically there are as many different nodal delineations as there are types of economic flow. The nodal area is determined by the sphere of influence of the node and its relation to other nodes at each hierarchial level. For development analyses the nodal area usually selected will be that which is the most general trading area such that socioeconomic interaction across boundaries is minimized. For a fuller discussion of the functional concept of nodal areas, see: Brian J. L. Berry, et al., op. cit.; Karl A. Fox, Programs for Economic Growth in Non-metropolitan Areas, paper presented at the Third Conference on Regional Accounts, Miami Beach, November 1964.

[21] E. g., minimum efficient size of community service facilities appears to require a population base of at least 7,000 persons. More specifically, with 1.6 percent of the population in the 17-year age group a community with a population base of 6,250 is required to provide a high-school graduating class of 100 assuming no dropouts.

[22] Data of the past several decades reveal no strong tendency for the dispersion of industrial employment throughout the nation to less-industrialized areas. Some industries (e.g., lumber and textiles) have had particular advantages in locating in rural areas but (a) these industries have grown less rapidly than the general economy, and (b) much of this spatial "shift" has already occurred. On the other hand, a number of lesser urban areas located in predominantly rural regions have shown growth.

All economies are characterized by certain dominant activities. For our purposes, dominant activities need not be those with the greatest volume of business or employing the largest number of workers; rather they may be defined as those having the greatest total (direct and indirect) influence on the aggregate activity of the economy and the welfare of its people.

Empirically we find that these dominant activities in a regional economy are often encompassed in the export sectors--or, in economic base terminology, the "basic sectors." A number of studies have therefore emphasized determination of basic-nonbasic ratios.[24]

Dominant sectors significantly influence the character of subsidiary activity, the pattern of urbanization, the character of the labor force, the social and political attitudes, and, if export oriented, the economic sensitivity to income and employment fluctuations as well as long-term trends in the nonlocal economy. For development analysis, we, therefore, want to determine the dominant activities of an area, their growth characteristics, and their influence on other activities including ultimately labor and personal consumption.

Comprehensive Structural Analysis for Growth Potential Determination. Each of the analytical methods mentioned above has limitations specific to its use. I shall not go into these as the techniques are fairly well qualified in the literature cited. However, for application to the determination of growth potentials, these analytical tools have one major fault in common: individually they fail to adequately incorporate aspects significant in the development process.

A comprehensive analytical framework, however, can combine the strong features of several techniques, each of which is inadequate by itself, but effective as an element in a comprehensive system. As a first approximation, taking into account only current transactions and omitting for the moment price and investment effects, we might consider the integrated use of an extended interindustry framework (depicting an area's technical and socioeconomic coefficients) and an external trade model (depicting the area's relations with other areas). The desirability as well as feasibility of alternative development projects could then be crudely estimated by comparative cost techniques and detailed cost-benefit analysis portraying the estimated time shape, spatial shape, and activity shape of costs and benefits.[25]

---

[23] See, e.g., W. W. Leontief, "The Structure of Development," Scientific American, September 1963, 209(3):148-166.

[24] See, e.g., R. W. Pfouts (ed.), The Techniques of Urban Economic Analysis, West Trenton: Chandler-Davis, 1960; C. M. Tiebout, The Community Economic Base Study, Supplementary Paper No. 16, New York: Committee for Economic Development, December 1962.

For more reliable estimates, modifications of the basic model based on supplementary analyses and trial runs of the model itself will be required to account for alternative technologies, static and dynamic internal and external economies of size and scale, price interactions, and sociological characteristics (motivation, value structures, institutions, etc.). Many of these modifications can be incorporated by means of programming techniques (alternative activities, shadow pricing, and so on).[26]

"Externalities" are of extreme significance in economic development.[27] To the extent that the analytical framework fails through excessive abstraction to incorporate them, it will fail us in determining the obstacles and potentials for growth. To develop detailed structural analysis models successfully incorporating dynamic aspects is without question expensive. However, to cease our efforts toward this approach would necessitate reliance upon "judgment and insight alone, which, though essential, are never as reliable alone as when supplemented with an analytical framework, capable of handling in a consistent fashion large numbers of interrelated variables and data."[28] The question comes down to: Either we develop a science of economic development; or we continue to rely on art.

---

[25] Unless we include the three basic socioeconomic dimensions, we will preclude such findings that the greatest gain of depressed area investment may in fact accrue outside the area of primary impact, perhaps in the metropolitan areas.

[26] Dynamic and static external economies result in part in that present market prices in the absence of perfect competition do not reflect optimal resource allocation conditions. On this point, see, e.g., H. B. Chenery, "Comparative Advantage and Development Policy," American Economic Review, March 1961, 51:18-51.

[27] Indeed, the rationale in public development policy is not that public action will directly increase incomes but that it will have a catalytic effect on the socioeconomic environment leading the nonpublic sector to develop itself.

No operational system of equations, however, is capable of describing all the interdependencies of an area economy. Analysis must therefore abstract from the real world situation, and uncertainties will still necessitate subjective evaluation and judgment. This poses the questions as to what is a feasible aggregation level which still preserves analytical validity, and what mechanisms are to be used to depict regional development and change.

Possibilities for analytic shortcuts to lessen the expense without signficant cost in analytic validity do exist. Data for less significant and/or more stable activities and relationships based on other areas and imputed within controls for a given area afford one possibility. When a few comprehensive studies have been made, we may be able to develop "proxy variables" which can represent with sufficient accuracy large segments of the socioeconomic structure alleviating much of the detailed analytic effort.

The most promising in terms of utility, but unfortunately perhaps the least feasible at present, is the full integration of research and of research and policy. Information developed for specific ad hoc research and policy purposes should be modified to be consistent with information requirements for development policy and research.[29] If the marginal effort to do this were made by the original investigator or policy agency, substantial social returns might be had at slight social cost.

---

[28] Walter Isard and J. H. Cumberland (eds.), op. cit., p. 422. F. T. Moore has rather succinctly made the point: "If we can use a carving knife (in policy-oriented research) on the national accounts, we'll need a scalpel on the region, and that enormously complicates the task of data collection and use" (in his discussion of the Perloff and Hirsch papers on Systems of Accounts for Urban Regions, American Economic Review, March 1962, 52:385).

[29] A step toward this integration is being made by the Office of Business Economics in their effort to develop periodic personal income and related income and product account series for Standard Metropolitan Statistical Areas as well as for states.

Current Questions without Answers

Some specific questions directly related to growth potential which in total or in part require a comprehensive and integrated analytic approach are as follows:

What is the delineation of the hierarchy of generalized nodal areas? This should be carried at least down to the county level to identify multi-county geographic areas which represent meaningful units for the purpose of local economic development.

What types of infrastructure (or industrialization) give rise to the greatest dynamic external economies? What are the "key" or "dominant" industries for various areas?

What is the level of capital stock by detailed industry in depressed and growth areas, and how does this stock directly and indirectly relate to aggregate economic activity and income?

How do local government services, facilities and other social overhead investments relate to growth potential? How do (can) local and state governments make the tax effort necessary to provide such?

As a national policy, should development be encouraged in regions where excess labor exists? The existence of urbanization diseconomies indicates that decentralization (i. e., to lesser urban centers) may involve less capital investment and other social costs; thus, what are the social costs and benefits involved in further growth area expansion versus development of depressed areas?

What is the input-output function of education (e. g., of education through high school; of vocational and inservice training; etc.)? How best may the output be discounted over time and space in terms of social return?

How sensitive is growth to alternative labor supply parameters (e. g., birth rates, per capita income available for private and public investment in human capital)? How may these parameters be technically affected, and what are the net social benefits and costs of doing or not doing so?

What skills are required for growth? Do our currently available data on occupation/education/age/sex/place/time provide an adequate description of the labor force for development analysis?

A final point concerns the need for basic measurement or inventory of activity. How can we best develop integrated data and information systems needed for valid socioeconomic development analyses? E.g., in contrast to singular data series, the personal income series as developed by the Office of Bsuiness Economics relates in a consistent manner to the whole framework of national social accounts.

A Summary Evaluation

Emphasis in rural depressed areas development has tended to be on welfare rather than efficiency; but for long-run, nonsubsidized adjustment, policy action must lead to "proficient" operation of the regional economy in effective competition with other potential growth areas, and not simply immediate welfare. A limited number of areas possess the location characteristics sufficiently attractive to serve as the basis of substantial economic development. Without agglomeration and other external economies associated with urban centers, the feasibility of industrialization projects is severely limited. Efforts which focus on the potential urban-industrial centers will be likely more successful in alleviating rural poverty than efforts in areas which are selected on other criteria--for example, the current level of income or the magnitude of rural under-employment. In effect, a policy and research approach giving primary attention to the interindustry relations and spatial interactions of potential urban-industrial centers will be more effective than a policy research approach involving a series of local area impact and growth studies.

Many analysts in the development field have realized that a purely economic or purely sociological analysis is partial in coverage of relevant phenomena, and therefore partial in deriving meaningful results useful for development policy. To get around this problem some have advocated the so-called "team approach." It should be realized, however, that the team approach per se does not insure a nonpartial analysis.... that it may in fact result in nothing more than a series of partial studies under a single cover. What is sorely needed is the integration of our knowledge and our research to obtain this knowledge.

Realistic economic development policy as well as analysis must be consistent with the possibilities for institutional, social, political and economic change. The policymaker has a right to ask whether the analyst is identifying those components which have significant socioeconomic value and which can be readily manipulated by the policymaker. But the analyst has a right to question the policymaker if he continues to employ ad hoc trial-and-error procedures and at best request ad hoc research when an integrated approach is needed to enable him to proceed efficiently in achieving development objectives in an integrated world.[30] The need for integration of research is equaled only by the need for integration of policy; it is imperative that research administrators and policymakers be made fully aware of the consequences of a partial approach.

To provide a useful instrument for policy concerning depressed rural areas, supporting research must construct and implement models of development elaborated to the point where they permit analysis via specific vertical and horizontal linkages of the derived impact effects of policy actions. Specifically, the objectives of such an approach should be to:

(a) Delineate activities as potential sources of growth;

(b) Evaluate the social costs and benefits of these activities as discounted over space and activity as well as time;

(c) Arrange the alternatives in some ordering useful to decisionmakers concerned with achieving a consistent policy solution yielding the greatest social return. The empirically implementable result of this integrated approach will be a disaggregated partial equilibrium development framework specific to the socioeconomic environment of a given area at a given time.

---

[30] This "symbiotic" relationship of policymaker and analyst is paraphrased from V. W. Ruttan, "Growth Stage Theories and Agricultural Development Policy," paper presented before the Australian Agricultural Economic Society, Perth, February 1965.

THE ADMINISTRATIVE PROBLEM OF ALLOCATING PUBLIC RESOURCES AMONG DEPRESSED RURAL AREAS

John D. Whisman
Assistant to the Governor for Area Development
and Kentucky Representative on the Appalachian Regional Commission
Frankfort, Kentucky

"Them as has, gits."

This truism has perhaps most often been expressed by the rural poor. And it certainly expresses, implicitly, the key problems of administering public programs in poor rural areas where low and declining commercial income and tax base must be posed against problems inevitably greater and more complex than those of richer areas.

Certainly, also, a usually distinguishing characteristic of depressed rural areas as contrasted with depressed urban areas is the comparative weakness of the institutions for administering public services and of utilizing public resources.

The Appalachian Regional Development Program is just now going into action as our nation's most advanced and most intensive effort to deal with the problems of a great region of economic distress--a region made up substantially of depressed rural areas. And the key objective of this program is not the conduct of a sequence of selected public works projects, as many have taken it to be, but it is, actually, to strengthen and restructure many of the public processes of this region and the public and private institutions required to administer them.

Since I regard the full expression of the concepts and policies of the Appalachian Program as being the best available--or perhaps I should say, emerging--key to the problem of administration of public resources among depressed rural areas, I will simply proceed with the discussion of the Appalachian Program in this light.

The Appalachian Program provides two factors which are basic, in my opinion, to an effective administration of public resources in depressed areas. First, it establishes a significantly sized geographic area in which special administrative policy may be adopted by all program agencies--local, state, or federal--without doing violence to the policies of the same agencies in their programs operating outside the area.

Second, it declares this special public policy to be a policy of "overall development"--a dynamic and comprehensive concern with actions concertedly geared to the creation of an improved level of living, rather than the usual concern for services geared to the demands of the existing situation.

The Congress of the United States, in passing the Appalachian Regional Development Act, has established a program which was first viewed as a unique way to meet a unique problem.

Less than two years ago, the solution of the problem was regarded as impossible; the creation of any act to establish Regional Planning or Development as a serious concern of Congress was regarded as impossible; and the word "Appalachia" was something almost no one had ever heard of and even the geologists could not agree on.

Today, as the Act sails through Congress at historic speed, it is not considered impossible--it is hailed proudly as one of the key measures of a new and vigorous national administration, a glamorous and popular political action, and a harbinger of success in bringing regional planning and development into focus as a favored approach for designing and administering programs to meet the nation's most difficult problems.

Appalachia has now become a word well recognized--and predictably misunderstood--by most everyone. It stands, generally, for two things--the nation's most difficult problem of distress and underdevelopment and the nation's most advanced program for recovery and development.

You'll be interested--and some of you pleased and some displeased--to know that the word Appalachia has become a synonym for regional development. More and more, as public officials, from New England to California, decide to try efforts in regional development, they express it by saying, "We want an Appalachian Program."

This program in many ways merits, and in many ways fails to merit, such implied compliments. It is clearly a very imperfect regional development program. But it is also clearly a perfect miracle of political action.

I personally believe that the Appalachian Program is now simply a breakthrough in political action which can and will lead to the creation of one of the world's most significant examples of human self-help action for improvement.

Let me try to express what I regard as the most significant meaning of the Appalachian Program in the shortest terms. There are two basic areas of accomplishment involved.

First--and necessarily and always first--the Appalachian Program will give hope and can give help, for the first time in years, to the many people of this mountain country who desperately need reasonable human opportunity.

In this regard, the Program has two basic purposes which were knowledgeably designed into it and which can be realistically projected as expected accomplishments. The basic purposes relate to a dual problem of Appalachia--underdevelopment of the region and its communities and distress of the people and their institutions for action. Arising from these problems the two purposes are to:

(a) Build a foundation of facilities critical to development. This requires a catch-up job in creating the physical facilities--roads, dams, and community service facilities--required to carry on life in a developed society but not created in the past years in most areas of Appalachia.

(b) Establish a continuing program for development. This means the creation of a design for action to guide the best use of slender resources; the establishment or strengthening of organizations and institutions capable of working in a comprehensive and sophisticated program; and the provision of technical competence at a scale adequate to deal with massive problem solution challenges.

All of this must be done without getting the program away from "the people" from whom it came, and for whom it must work. And, while I will not dwell here on items of history, I should report to you that this program did not originate in Washington. It had its key beginnings in action--and the first drafting of its design in 1960 in Eastern Kentucky, with the people of the region making their own beginnings from their impossible problems. It was formally expressed in a report of the Eastern Kentucky Regional Development Commission, called PROGRAM 60, published on the first of January, 1960. It came to the attention of Governors, who responded to a call by Governor Millard Tawes of Maryland to attend the first Conference of Appalachian Governors in Maryland in May of 1960.

The Governors organized the Conference as a permanent organization which met several times with President Kennedy, who then created the President's Appalachian Regional Commission on April 9, 1963. The legislation and the program have followed the work of the Commission, whose report mirrors closely the original recommendations from the people of Eastern Kentucky and the other states.

The second basic area of accomplishment which, I believe, can be cited for the Appalachian Program, is one of greater direct interest to you. The creation of this program delivers an unexpected breakthrough of hope for the practical acceptance of the values of regional planning and development in our public processes today. It further may blaze a trail in the more effective use of the "development process" as an emerging professional discipline and a basis for public policy in which planning and other technical competencies may be more successfully related to public administration and citizen action. Finally, most worthy of mention, Appalachia will almost certainly produce some specific and usable models of local-state and state-federal working relationships in a new "dynamic federalism" of program administration, as well as some new and practical experiences in the solution of "small town centered, rural area" problems, through the formulation of multi-jurisdictional "development districts" to meet the technical and administrative problems of carrying out projects within a complex and comprehensive development program.

In this regard, I always recall the classic cartoon published after President Johnson's declaration of "War on Poverty." The drawing showed an Appalachian mountaineer with his long rifle, sighting over a stump in front of his modest cabin, as he shouted over his shoulder to a woman peeking out the door, "I'll tell ya this, Maw - they're gonna know they was in a hell of a fight."

I might say that the new relationships fostered by Appalachia--states and the Federal Government--politicians and planners--the mountaineers and the professionals--may make some of us come to know that we're going to be in a "hell of a partnership."

The strangeness of these partnerships--and the fact that they are required to work in a comprehensive corporate structure of several partnerships--is just one of the important reasons why I sometimes describe the Appalachian Program as "the extremely difficult solution to an impossible problem."

I find that there are, often, two basic reactions to an impossible problem. One is to admit or proclaim its impossibility. The other is to proclaim a pat solution which would be relatively easy to do, but which is impossible to get done. Our Appalachian solution is not easy--it is difficult to describe, difficult to understand, and it will be difficult to do. But it is possible.

With all these qualifying comments about the Appalachian Program, then, let me continue with some of the key factors involved in the Appalachian situation. Let us consider THE REGION -- THE PROBLEM -- THE PROGRAM and THE POTENTIAL FOR DEVELOPMENT of the underdeveloped opportunity of Appalachia.

THE APPALACHIAN REGION is made up largely of areas in eleven or twelve states in which a total complex of intense problems presents one of the most severe concentrations of economic and social distress found in any part of the United States. Nearly 16,000,000 people dwell in the 175,000 square miles of its mountains and valleys.

While the individual problems which make Appalachia a "region of trouble" can be seen, it is important to recognize that the presence of such a total combination of intense problems makes it more difficult to treat any one of them and creates an overall problem in itself. This overall situation, we must recognize as "THE APPALACHIAN PROBLEM" and any attack on an individual problem, to be successful, must be incorporated into a combination of special actions.

In this region are the nation's most intensive concentrations of a combination of unemployment, low income, low levels of educational attainment, public health, community development, commercial and industrial development and other factors of poverty and underdevelopment.

The total problem and many of its separate parts are not being reduced by the total effect of current programs but are worsening. Thus, added or improved development actions are needed.

The prime characteristic of this region (in relation to development) is that it is underdeveloped for its relatively dense population. It is faced with a need for overcoming a development lag while its own facility, resource and institutional base for action to do so is weak--and in a state of further decline.

Underdevelopment is especially characteristic of most of the region's communities. This is the largest region in the nation characterized by an unusually heavy population density which, at the same time, has so few urban centers of any size. The Region is made up almost entirely of small and very small political jurisdictions, within which centers of urban service, needed by areas in today's terms, have not been developed.

In the mining-timbering-agriculture based economy of the past, these urban service centers were not essential and were not developed.

While it is not envisioned that this region is to shift to a basically urban or industrial economy, some development in this direction is one of the essential objectives for the regional development program, to build points of growth, and service in the region's transition to a new and stable growth economy.

Many towns of the region, while inadequate and faltering now, do have a clear and self-identified potential for growth as urban centers within the framework of the prospective concentrated development program.

Appalachia, with its great problems inundating an entire region like a flood, differs even from a city slum in that the slum is a part of an otherwise healthy community. The communities of many areas of Appalachia--including whole counties surrounded by several circular layers of other whole counties--are completely immersed in a total problem situation. For many of these, the only healthy governmental units capable of providing service or assistance in today's terms are the state or federal governments. Since neither state nor nation is nor should be equipped to render local government services, it is obvious that they both must make special efforts--in a regional framework--to aid Appalachian local government back to good health.

The uniqueness of the Appalachian Problem--and of the region--requires the formulation of an overall development program in which special actions are geared specifically to the real and unusual situation of areas of this region and all actions are strengthened by careful coordination. This combination of special actions to meet special problems--with the combination of actions designed to meet the overall problem more effectively--is the simplest definition of the proposed APPALACHIAN REGIONAL DEVELOPMENT PROGRAM.

Within this problem region, obvious resources are available to show that the basis for the APPALACHIAN POTENTIAL FOR DEVELOPMENT is much greater than is being realized. Modern planning techniques and technological processes can be applied to help make more action programs more effective and to realize much of this potential opportunity.

The most critical factor of the Appalachian Problem is the underdevelopment of the region.

The most tragic expression of this problem is the deprivation of opportunity of the region's people.

-- reasonable opportunity for education and personal development.

-- reasonable opportunity to obtain jobs and to develop free enterprise in fair commerce with the nation.

-- reasonable opportunity to develop communities and areas to a level at which they can provide essential services, deal with local problems and responsibly maintain a way of life commensurate with the appropriate expectations of a new generation in twentieth century America.

The design and development of such opportunity is the fundamental purpose of the Appalachian Regional Development Program.

LOCAL CAPACITY FOR DEVELOPMENT PROGRAMS is the final key to success of all else in the regional program. The need for expert technical assistance services for local people carrying out these programs will not be unique in Appalachia--it is a growing need for all local groups in meeting today's increasingly complex development problems. What is unique for Appalachia is that its capacity to use technical assistance, now deficient, will increase as the overall program begins to have effect. Local development capacity will increase, rising slowly at first when investment is being put in to meet basic problems and provide basic facilities, but rising at a rapidly increasing rate as initial gains begin to multiply the effectiveness of further technical assistance to local effort and to the overall program.

Since the problem of the small, technically inadequate local jurisdiction is one of the problems found generally in the region, it is essential that a prototype be developed for the creation of multi-county "DEVELOPMENT DISTRICTS" within which an "Area Council" could have operating jurisdiction for certain development projects, with the concurrence of involved counties, towns or other jurisdictions. The Regional Program should operate so as to encourage the formation of such "developmental jurisdictions" in areas of the region where this device is needed to create a capacity for local project action in response to the stimulus and opportunity of the Regional Program.

In fact, our current strategy for devising the Regional Program involves the SUBREGIONALIZATION of Appalachia into meaningful part-regions or "Development Areas." Within each of these areas then, the program will provide a technical back-up in achieving a maximum design for the growth potential of that area. The coordinating ability of the Appalachian Regional Commission will help bring existing agencies into sympathetic and coordinated support of the design--to a reasonable degree, let us say--and the supplemental investment ability of the Commission's program will tend to remove at least some of the "impossibilities" which have previously thwarted the development process.

In stressing the true state-federal nature of the regional program, geared to the support of local effort, the Commission has recognized that the state is the best level for programming of technical assistance services. The regional organization will simply allow the states to improve model techniques and to integrate federal service programs to create maximum effectiveness of all programs at the local point of use.

A MAJOR PURPOSE OF THE PROGRAM IS TO STRENGTHEN STATE GOVERNMENTS by serving as a specialist for them--working in cooperation with them--to concentrate on a problem which for each of them is their most difficult problem. In increasing the states' strength to exercise "states' responsibilities" for meeting this toughest of problems, a major and practical step is made in strengthening states' rights.

A MAJOR PURPOSE IS TO STRENGTHEN LOCAL GOVERNMENT--especially the small local government which is almost universally typical of the Appalachian Region--by applying a concentration of technical assistance to local leadership working on the solution of key problems now suffered generally by towns of the region and uniquely by towns of this region as differing from towns of most other regions. These basic problems have grown faster than the towns have grown in capacity to deal with them and--unless solved by a capable and adequate special effort--now threaten to destroy the possibility of strength and growth of local government within the region.

A MAJOR PURPOSE IS TO STRENGTHEN THE PROGRAMS OF THE FEDERAL GOVERNMENT by giving them a realistic means of focusing directly upon the problems general and unique to this region. This pilot effort can have immeasurable value in advancing techniques by which federal programs may be made more responsive and effective for the particular problems and characteristics of many states and regions.

A MAJOR PURPOSE IS TO STRENGTHEN LOCAL-STATE-FEDERAL RELATIONSHIPS--to improve each and to allow the mobilization of all on the priority problems geared to development.

The priority function and capability of the Appalachian Regional Commission must be to act continuously to define specific problems and program actions necessary to create and sustain the initial and operationally changing design of the program of development for the region. The Commission should be identified as a "developer," as differentiated from institutions of planning, research or, even, action alone. Essentially, a "developer" is one who works with existing groups to bring about a changed situation within which a desired objective may become possible and feasible.

A principal factor in evaluating the worth of the Regional Commission is that it can be a vehicle through which regular agencies of government, carrying on programs generally geared to a relatively prosperous economy, may orient general operational policies to those geared to development of a non-viable area. Just as public policy can be set for the conduct of a war, it can be set to place priority upon development objectives. But it is hard to do this on a piecemeal basis, and the regional framework can allow for certain special policies consistent within the region without change to programs operating outside the Region. Thus, the Appalachian Regional Development Program is seen as a special, but integral part of the nation's total effort for progress.

In regard to consideration of the Appalachian Program in the perspective of the national benefit and the nation's needs, I would like to consider with you the impact of this program's implications outside our region.

The advantages of reducing the overt public costs of Appalachia's distress and of replacing it with the productivity of which the region is capable is so obvious I will not dwell upon it. The only valid question involved here is whether our program will work to this accomplishment. We are confident that it will, and we readily admit that the proof of this is in the doing. We are confident that our effort has been designed with the greatest realistic potential for this accomplishment and we are determined to make it work.

However, we believe that the greatest contribution we will make with this program lies in the process we are evolving--a process which is to be usable in prosperous regions, as well as in distressed areas elsewhere. We believe we have helped to sell this process years ahead of its advent otherwise. Now we believe we will work to spearhead the refinement of its operation to give it greater and greater usability.

Let me consider this process with you, at this point.

In some parts of Appalachia, it has been said that we are so far behind that we don't even have modern problems.

But we've learned better. We've learned that some of our problems in Appalachia are, in fact, so modern that the rest of America is just learning about them--and just realizing that the whole nation will be dealing with them in the near future.

Appalachia's problems, like those of all America, arise from the ironic contrasts of the emerging age of technology and abundance--want in the midst of plenty--increasing unemployment in a time of the greatest and most rapidly increasing productivity of all time--the economic deprivation and the threatened demise of more and more farmers at the zenith of agricultural success--and increasing disparity between the ability of many men and the ability required in the only available jobs, in the same time and place with the most advanced free public education system in history--and an alarming failure of both small and metropolitan communities to hold back the trends of decline and blight in the world's greatest decades of industrial development and urbanization.

These are modern problems which have been critical for some years past in Appalachia--just becoming critical in the United States, in Canada and in the world.

Large areas of Appalachia have known depression as the chronic condition of a geographic area, when the nation thought of depression as an unfortunate cycle in time. Only now do we see a stubborn increase in the nation's recognition of the problem of chronically distressed areas.

Automation was a problem in the mining country of Eastern Kentucky when it was still a textbook word in Detroit.

When the small, hill ringed, creek bottom farm becomes uneconomic as an operating unit in Kentucky's mountain country, it is not to be combined with other tracts into a large farm as it can be in the Midwest. The economic extinction of that small farm--and its farm family--is as complete now as is sometimes predicted for many other American farm families in the future.

The sad spectacle of dying small town and blighted metropolitan area has also been an Appalachian story long before its recognition as a critical national problem. For the out-migrant of Appalachia has often been a citizen of both--leaving the fading town of Appalachia where he had no opportunity to contribute either to himself or his community and drifting to join--and to help create--the Appalachian community of the blighted metropolitan area.

The problems of local government and of the community in the underdeveloped Appalachian Region represent perhaps the country's most intensive illustration of the difficulty of adjustment and the need for more effective use of development techniques. Here the healthy cycle of creativity and growth, which development seeks to establish, has broken down entirely. Here programs for education, health, housing, community facilities and even private commercial and industrial enterprise have failed to meet the needs of people in a great regional climate of failure. Here, for so long a time that a second generation has known no other environment, the anachronistic "modern problems" of Appalachia--without contemporary solutions--have brought about a failure for human opportunity in the midst of great resources and under the auspices of America's institutions for growth and progress. The objectivity of the example for the decision makers of our nation--and of our nation's institutions--seems clear if we see that the APPALACHIAN PROBLEM MAY WELL BE MORE A HARBINGER OF AMERICA'S FUTURE THAN IT IS A RELIC OF OUR NATION'S PAST.

Now our purpose in claiming that we have discovered that our Appalachian problems are modern is not to congratulate ourselves, not to simply put a name on our problems. Our purpose is to state our awareness of the nature of our problems as a first basis for consideration of public and private actions we need to deal with them.

When we speak of underdevelopment in Appalachia, we do so, of course, in the relative sense. We simply have not developed the facilities and services, customs and practices in many of our communities and areas which will allow our people to create an environment of adequate opportunity for themselves in terms of the needs and opportunities of today or tomorrow.

This comparative underdevelopment--so obviously a characteristic of Appalachia--is also, in great degree, expressive of our national and world problems. But I also believe it is an important principal analysis because it implies the strategic nature of the contemporary attack needed to meet our "modern problems."

For the antidote to the problems of underdevelopment is the improvement and acceleration of the process of development--with reference to the full meaning of the now emerging concept of development as the technique for utilizing all resources and institutions in a more particular design for the creation of growth and progress for the benefit of individual human opportunity.

Development--as we are coming to know it now--is fast evolving into a new and important activity in America and the world. An organized approach to improvement action involving all types of agencies, groups and individuals, development is today the process by which individuals and small groups can work together to involve themselves in overcoming the problems of bigness and complexity faced in the tasks necessary to bring improvements of all kinds to a community or area.

On the perfection of this concept and process, more than any other, may well rest the character and climate of our future in the nation and in the world.

I am thinking here of institutions and processes for development as a function in itself--rather than simply those institutions and processes dealing with more specific problems such as transportation, education or commerce. It is in the establishment and perfection of such institutions and processes--with their relationship to all agencies and to all resources--that we will achieve effective administration of public programs in depressed rural areas, especially, although benefits will accrue to areas of all kinds.

In short, we need a basic public policy for development--set to identify, select and take action on priority objectives for development as contrasted with what we might call the normal public policy for maintenance of the general welfare.

Now, what does this mean, in specifics?

It means, for one thing, that we can add a strategic level to the selection of program purposes and actions--we can find, easily and clearly, that we will take some actions within a developmental framework where our purpose is to create growth, which we will not take in our traditional framework in which most decisions are based on reaction to and service of existing growth.

And growth is, of course, only one developmental objective.

Obviously, if we understand the development process, our action in this framework will be more creative, more dynamic, more carefully geared to specific problems, more clearly related to specific efforts to identify and understand real problems; more flexibly set to allow special action to meet changing problems; more susceptible to comprehensive action on problems with the separate actions of various agencies working in better concert to supplement and strengthen one another and to meet overall goals.

Perhaps the most direct way to state the differentiation between the two basic policy considerations is that the general welfare purpose presumes an existing growth factor and sets most decisions on criteria in response to growth demand, while the development purpose presumes a deficit in rate of growth and sets decisions for action geared to the creation or stimulus of basic growth.

In most areas, the overall policy of action would best be based on a combination of emphasis on each of these objectives--it is unlikely that any area can soon do without development actions entirely. But, there are clearly differing areas, today, where the prime emphasis needs to apply to one or the other of these objectives, with a resultant and beneficial impact on the local economy and way of life.

The availability of new programs in which the "development factor" is a clear design and policy element can give us a wholly new basis for dealing with the administrative problems of resource use and allocation to meet critical problems in depressed rural areas especially. The Appalachian Regional Development Act and its sister vessel, the pending Economic Development Act, provide a basic framework for establishing an Area Development Program, wherever desired, as the prime basis for policy and action determination by all agencies functioning in a given area. Additional new programs, such as Economic Opportunity, Manpower and Defense Training, and other training programs, Land and Water Resources Conservation and Development, Federal Aid to Education, and many others, provide "developmental tools" for use in comprehensive development program areas.

As these new programs begin to be effective in establishing greater technical staff competence in rural areas, in bringing all agencies into greater familiarity with a coordinated multi-agency effort, and in establishing greater cognizance of real problem factors and improving overall development program design, the focus and the methods for more successful administrative techniques will emerge.

Our new opportunity is not that the new programs set forth the answers to administrative and other problems, but they are geared to allow us to create the answers. Knowing as well as anyone what tough problems face us in seeking the best from our own creative abilities, I am looking forward to a good faith effort by all of us in this new moment of opportunity.